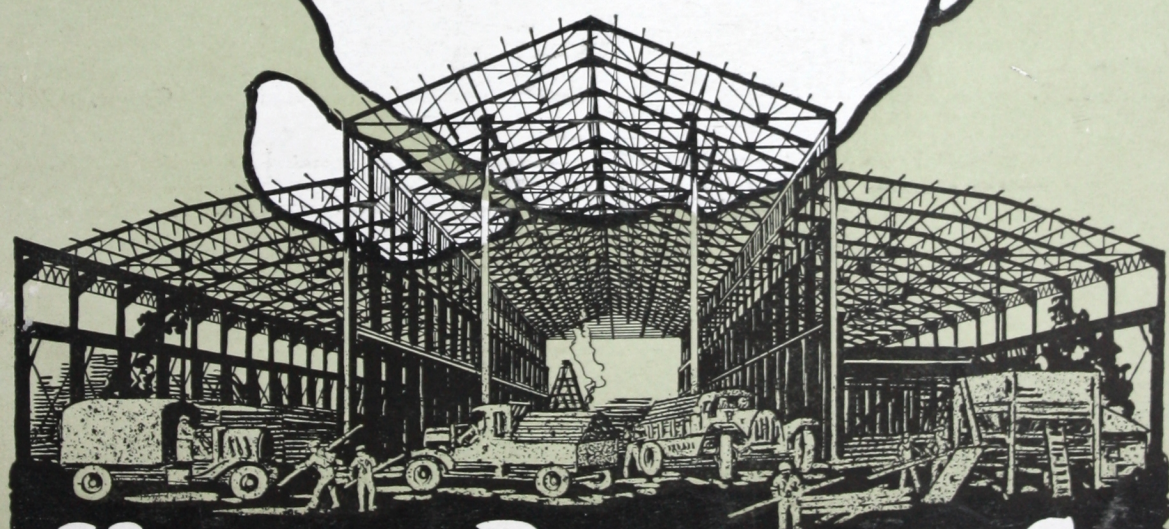


68-5.

FEB 15 1925



• PERMANENCY •
**STRUCTURAL
STEEL**
SAFETY ECONOMY



HARRIS BROTHERS Co.
▼ CHICAGO ▼

Views of Some of Our Great Operations Which Gained for Us An Envable Reputation

Louisiana Purchase
Exposition
1904



Pan-American
Exposition
Buffalo, N. Y.



World's Columbian
Exposition
1893



Trans-Mississippi
Fair
Omaha, Nebraska

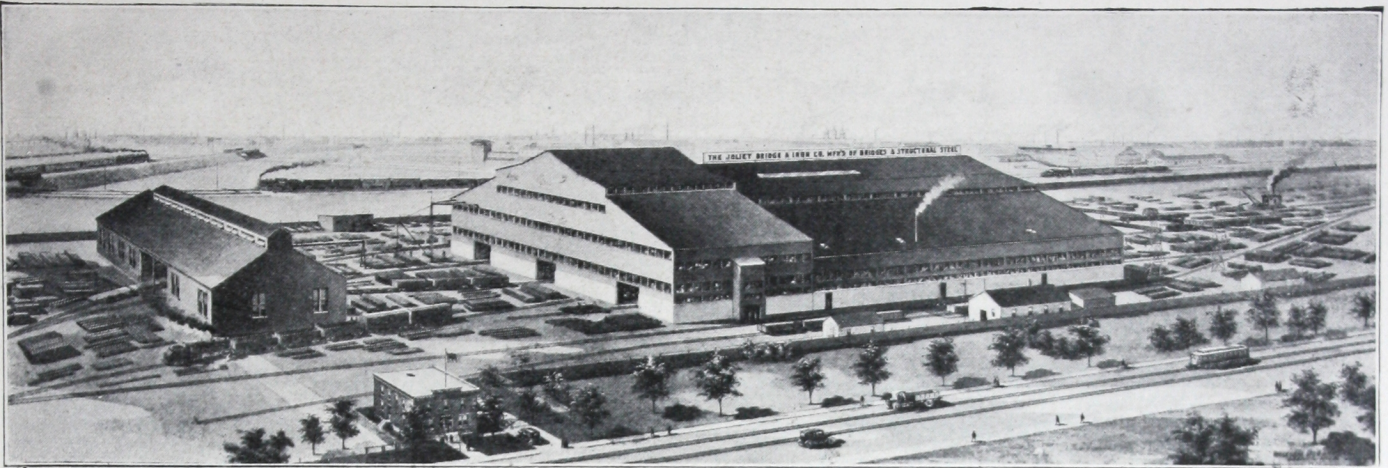
The original Ferris Wheel moved from Chicago, re-erected and operated by us at the Louisiana Purchase Exposition, St. Louis, Missouri, in 1904. Photographed September 14, 1895, at the start of dismantling operations.



Culebra cut, Panama Canal. Along this route we salvaged the billion franc waste of the French attempt to build the Canal.



Loading ship with steel for Italy at our Colon Canal Zone yard. Note Panama railroad car.



JOLIET BRIDGE & IRON CO.

*at Joliet, Illinois, will be
controlled and operated by*

HARRIS BROTHERS CO.

¶ Joliet Bridge & Iron Company owns and operates one of the most complete and modern fabricating and repair shops in the United States—and that means the world. The plant covers nearly 18 acres of ground and is equipped with every sort of modern labor-saving device for the complete fabrication of buildings, bridges and structural steel of all kinds. In addition, they have facilities for the re-building of machinery and equipment for the storage and repairs of cars, locomotives and rolling stock. Operations of this company will be controlled by Harris Brothers Co.

¶ We are about to enter into full activities at Joliet, and that means tremendous increased power for quick delivery of steel buildings, bridges, etc.—an added step in our march of progress which will create vastly increased facilities for us.

¶ This plant at Joliet is conveniently located for quick shipments. The Elgin, Joliet & Eastern Railroad, known as the "Outer Belt System" of Chicago, as well as the Chicago & Alton Railroad both have direct connections into the plant, tracks running through the main building. A large portion of our equipment will, in the future, be offered for delivery from Joliet, Illinois.

HARRIS BROTHERS CO.
35th and Iron Streets, Chicago

10 90-1972 TCF

ED

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L



Harri

1893

1920

¶ This Steel Booklet is intended for those whose paramount purpose is to build safely, permanently and economically.

¶ No matter what the need, we feel this booklet will have succeeded in its purpose if it shows the reader how the triangle of "Safety, Permanency and Economy" is ideally combined in the service of

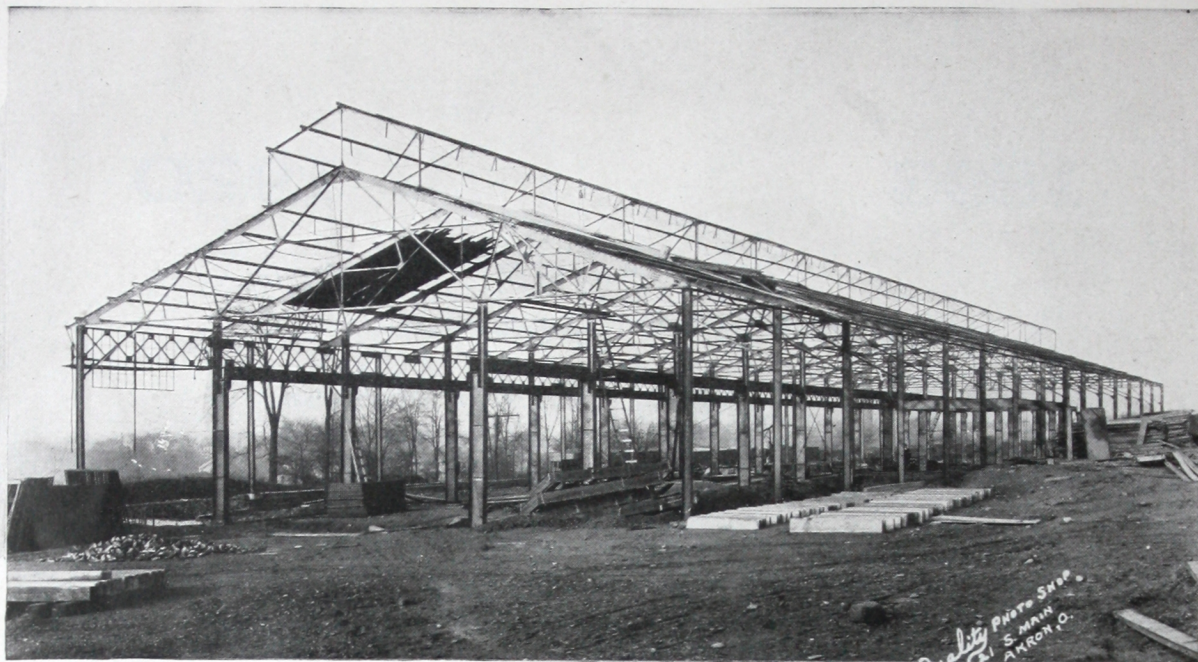
HARRIS BROTHERS COMPANY

Guarantee

¶ We know of only one kind of a guarantee—one that really and fully interprets its meaning. That is a guarantee which consists of a positive, unqualified, irrevocable assurance that fulfills the spirit as well as the letter; we hold it must not only be sincere in motive, but substantial in effect.

¶ Therefore when we give a Guarantee concerning our Serviceable Steel, we offer as a pledge of satisfaction, to back it with the stability of our \$10,000,000 Institution.

¶ We offer you the privilege, whenever you desire, to call in any reliable Engineers before the construction of Building, to pass on the steel. If they do not find it satisfactory, according to the specifications understood at the time of sale, in regard to design and strength, we refund all money paid by you and accept return of the steel.



Building 80x300 Feet

Fabricated and erected by us for Taplin Rice Clerkin Company
Akron, Ohio



Two Views of Other Structures
Recently Erected



Fabricated and erected by us for The Cottonseed Products Company
Louisville, Kentucky

¶ Whether a manufacturer, architect, contractor, owner or prospective builder, you are naturally interested in the basic elements of Service and Economy. Interested in them, not as terms, but as Primal Facts.

¶ In presenting this Booklet, it is not our purpose to render a "preachment" on service, but rather to show how we DELIVER it—a service such as has symbolized the growth and progress of HARRIS BROTHERS COMPANY ever since its inception, upwards of a quarter century ago.

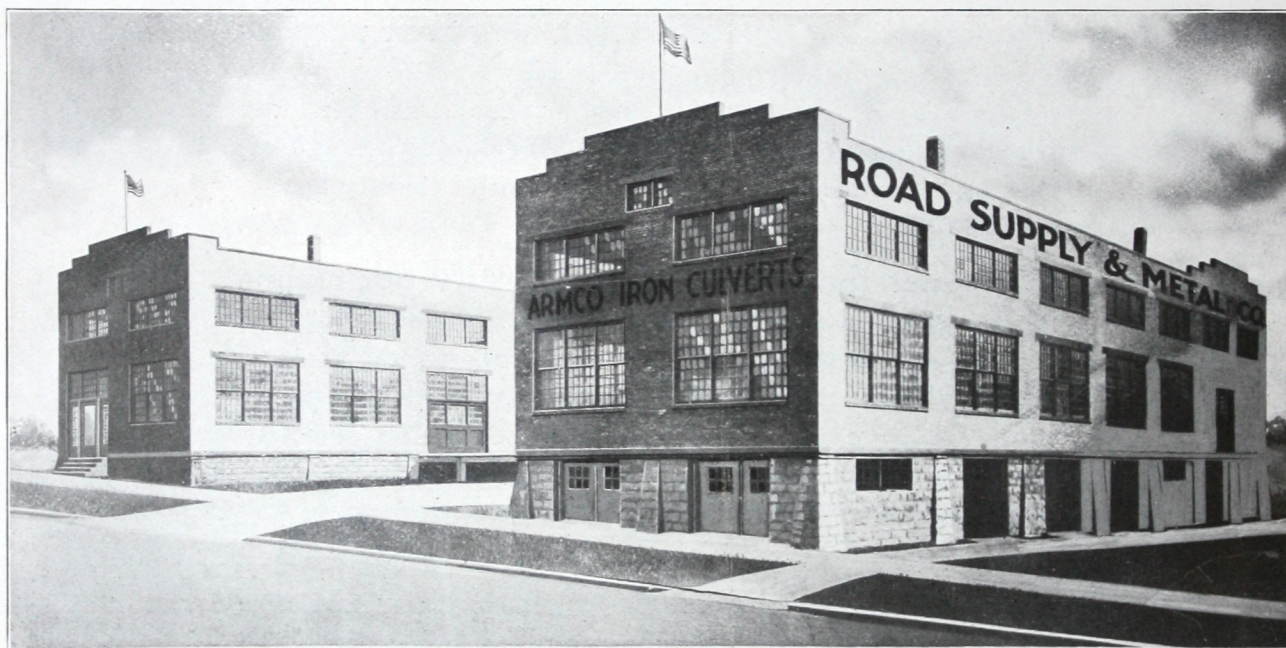
¶ In order that we may fully justify our claims to serve you and save for you an average of from twenty-five to fifty per cent in cash on your purchases—we are presenting as evidence in these pages, a few recent Structures for which we have not only supplied the Steel, but in many instances, also Erected the structures complete, and equipped and furnished them thruout with their respective needs.

¶ And what we have accomplished for owners in the Saving of Money—we have equaled in the Saving of Time, completing the work with a despatch and satisfaction truly characteristic of Harris Brothers Company.

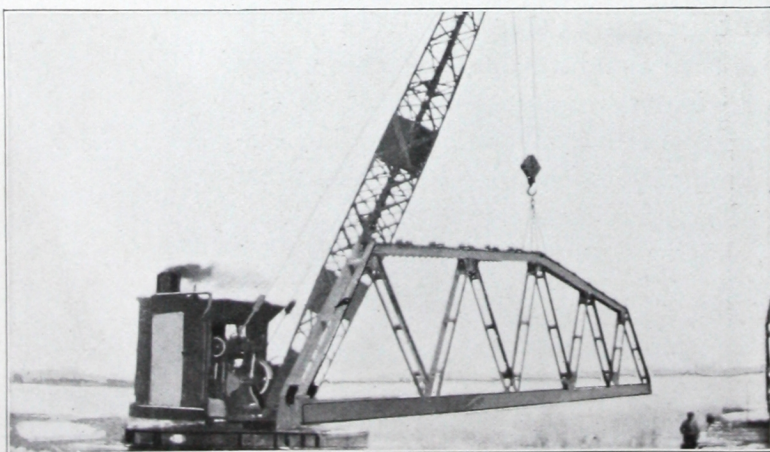
¶ While these photographic structures bespeak our achievements better than could a volume of words, they but slightly portray the variety and extensiveness of our operations, and by no means reflect all the outstanding features and advantages embodied in our Service which must be experienced to be fully appreciated.

But Wherein Lies Our Unusual Capacity to Serve and Our Ability to Undersell?

¶ Through and by the successful application of the dominant Cash Idea of purchasing and gathering both new and serviceable-tested Steel and Building Material, from among other sources, Sheriffs', Receivers', Trustees' and overstocked manufacturers' sales; by the outright purchase of Industrial Plants and Buildings which have been in service—and still other buildings which from lack of funds or other reasons were uncompleted.



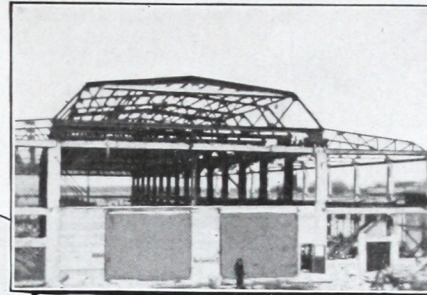
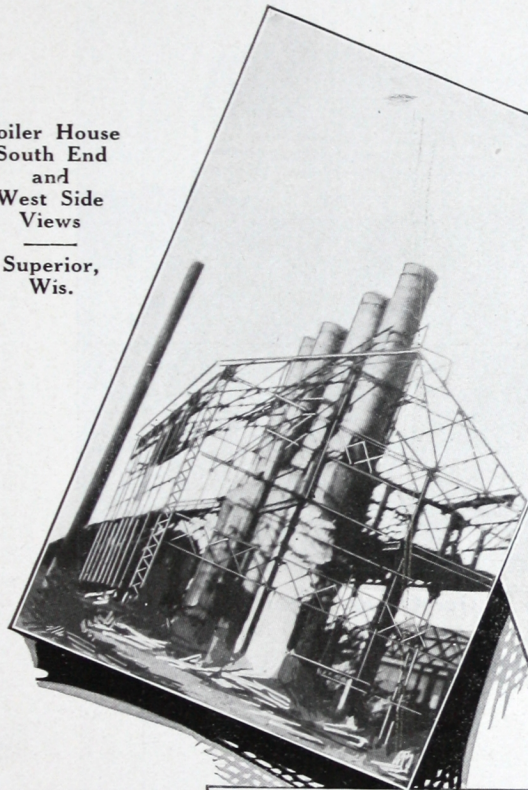
Road Supply & Metal Co.
Topeka, Kansas



Placing
A Bridge Truss
in position
at a Recent
Big Job

¶ We are thus enabled to sell the dependable material with such decisive economy that to have become the World's Largest "Clearing House" of Building Material, was only natural—a matter of course.

Boiler House
South End
and
West Side
Views
—
Superior,
Wis.



Shorthill
Steel & Iron
Company
Perry, Iowa

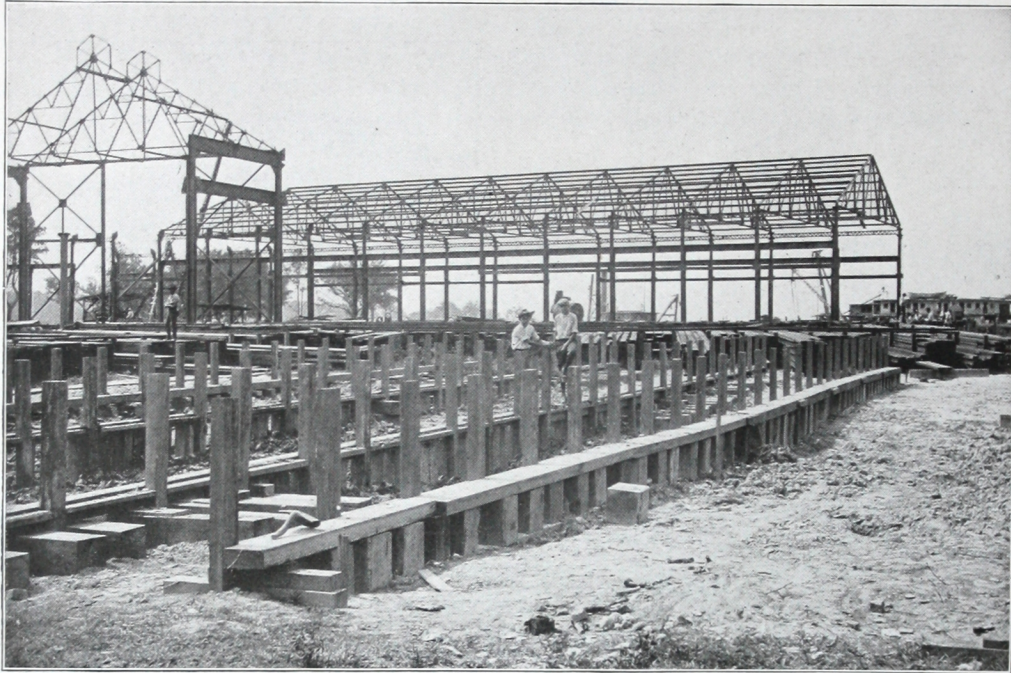


Reinforced
Concrete Building
Milwaukee, Wis.

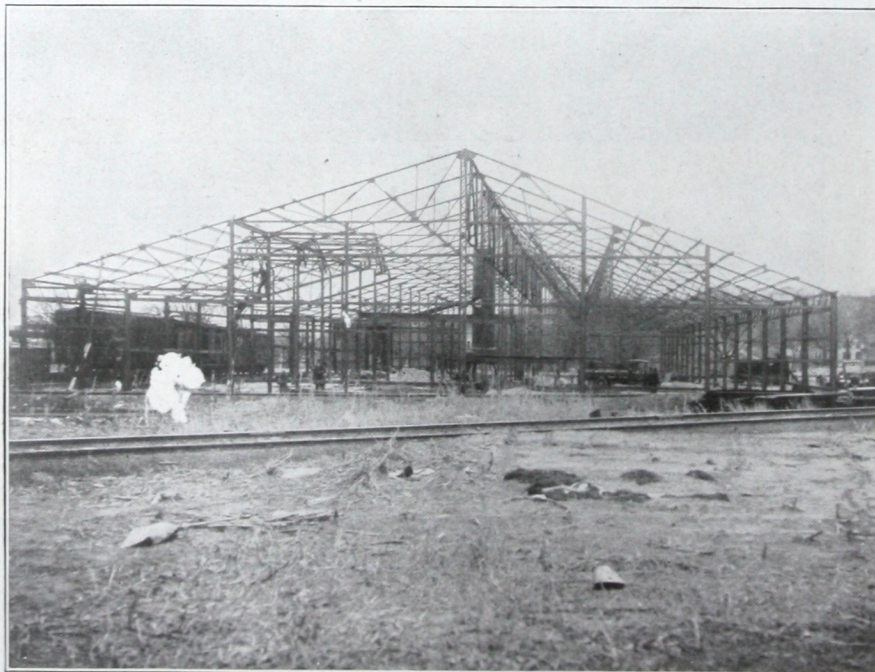


Pennsylvania Plate Glass Works
Alexandria, Indiana

¶ But to more completely answer the questions of the "How and Why" of **Saving** and **Serving** we must needs take you to the formation period of the company, 27 years back—to the founding of this institution—and in briefly sketching its history and the phase of its development and progress, we ask your indulgence; for our purpose in so doing is no mere desire to dwell on our World Wide Operations, as large and extensive as these may be.

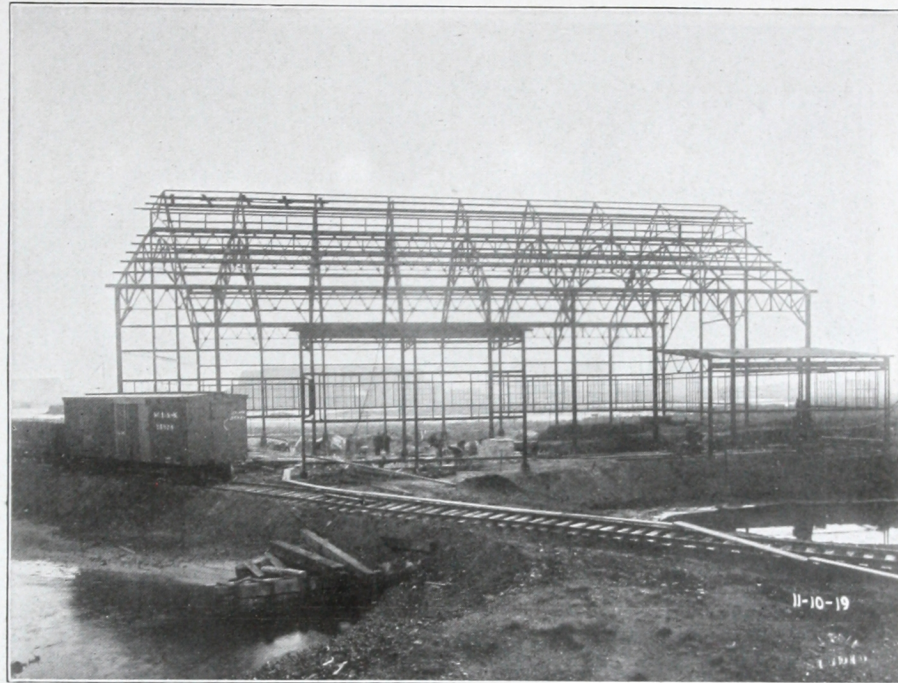


View of Building Erected for Our Own Use at Our Chicago Boiler Works



View of Building Recently Erected for Cooper Foundry Co.
Atchison, Kansas

¶ In the year 1892 when the commercial world was not yet accustomed to business transactions of a startlingly colossal nature—Harris Brothers, the owners of the institution now bearing their name, conceived and put into practice an IDEA.



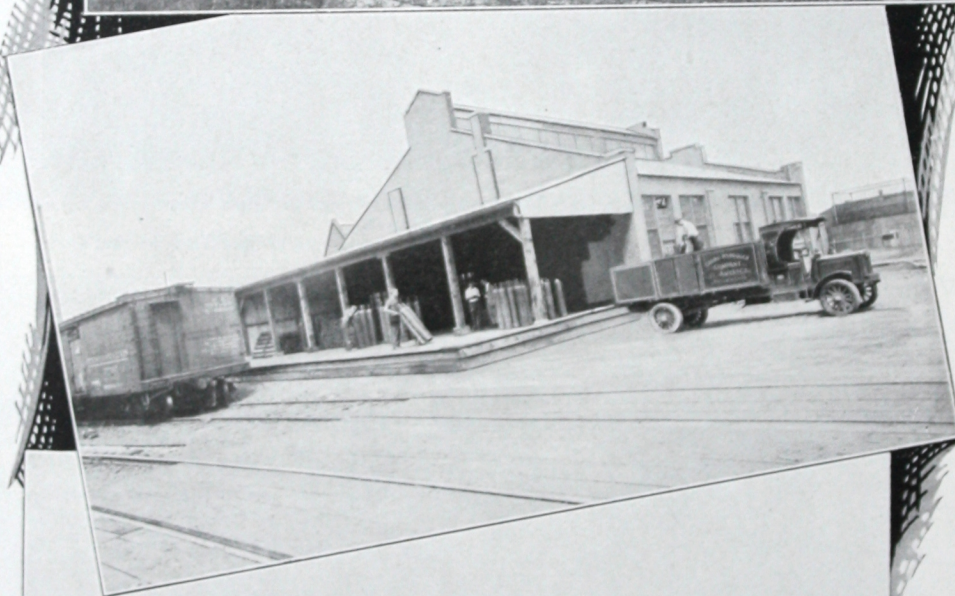
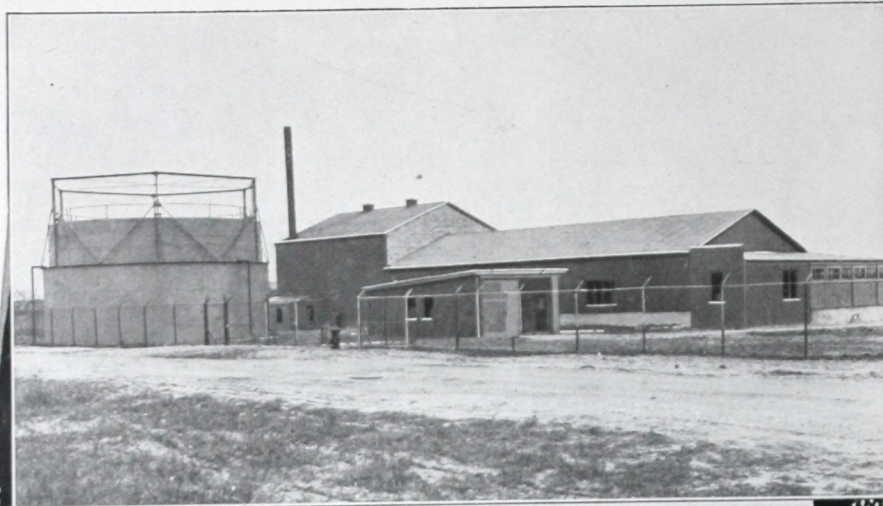
Steel Work of Structure Just Completed for Pollak Steel Co.,
South Chicago, Illinois



View of Steel Building Now Being Completed for O. K. Giant Battery Co.
Gary, Indiana

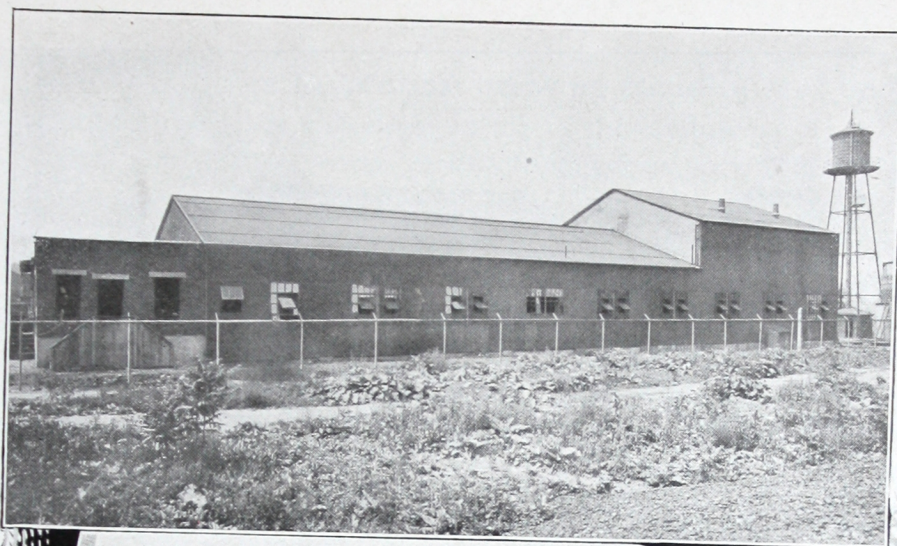
A Group of Six Buildings for

—Evidence That Our Service Brings



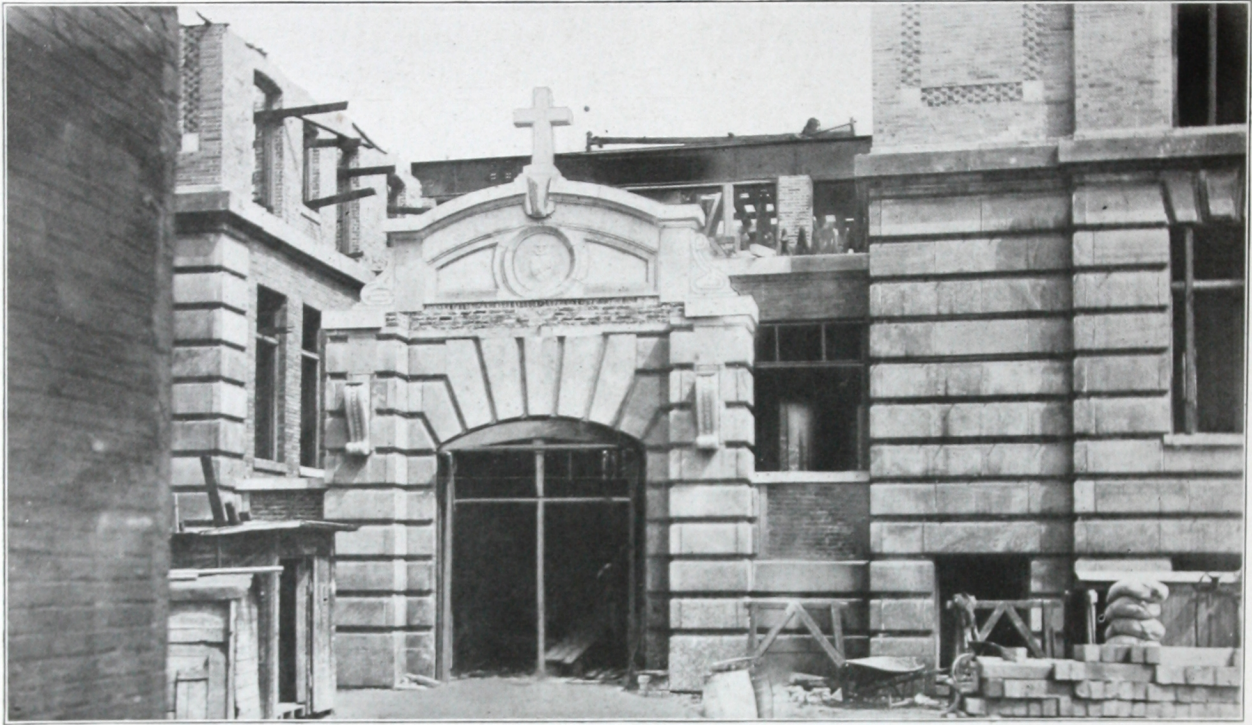
the Carbo-Hydrogen Co.

Repeat Orders — A Strong Recommendation

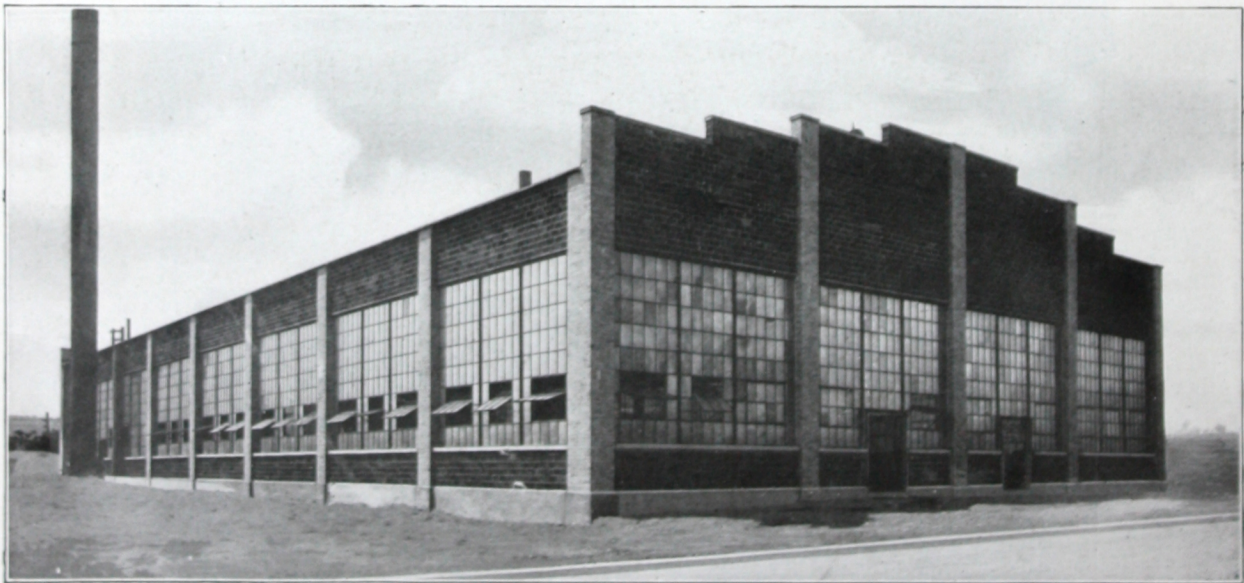


HARRIS BROTHERS COMPANY, CHICAGO

How potential a force was this idea in the contracting operations of America, subsequent years have fully proven. The Idea based on the very bed rock of Economics, is—nothing short of Conserving Wealth, by conserving the very materials which form the basis of wealth.



Columbus Memorial Hospital, Chicago
In Course of Construction



Electric Material Co., Northeast Pennsylvania
A Splendid Example of Our Steel Service

¶ Thus; this Institution grew so steadily and became so dominant an Economic factor in the commerce of America, that in 1913, by virtue of this tremendous growth and because of a desire to have its name more in keeping with its purpose and activities—"the constructive service in Building Operations"—it felt that it could best serve its numerous customers by applying the names of its founders—Harris Brothers—who are to this day the active executives of HARRIS BROTHERS COMPANY.

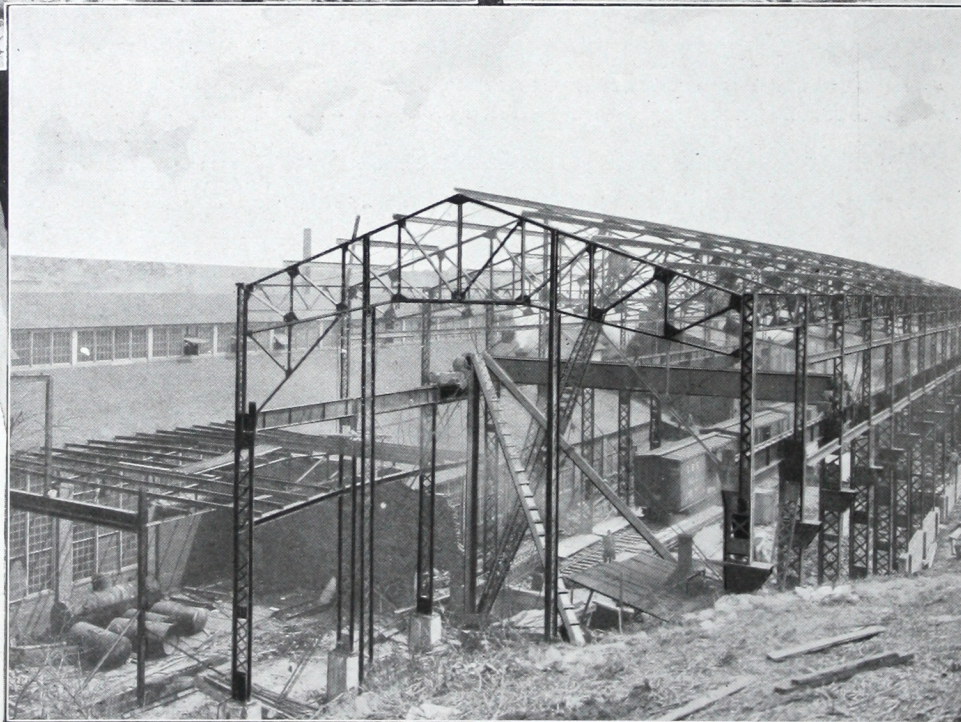
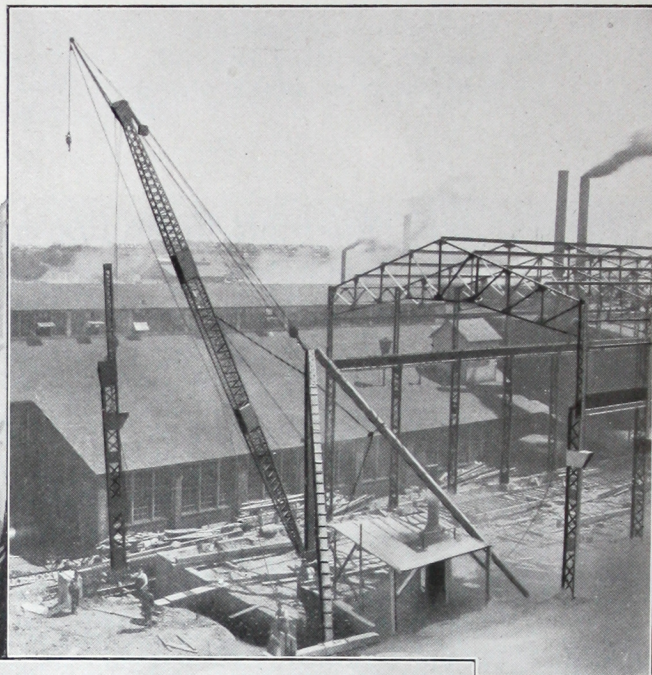
¶ Recognizing the impelling commercial need for a Great Central Clearing House, where the forces of demand and supply could be best adjusted, Harris Brothers first began their contracting operations under the then corporate name of the Chicago House Wrecking Company.

¶ Their object was then, as it is today—to cut all elements of "waste" from building construction.

¶ With this policy firmly grounded, they undertook and successfully executed the purchase of the entire World's Columbian Exposition in the year 1893.

¶ This favorable purchase resulted in so much subsequent saving to users of steel and other building material, whom we in turn served, that hundreds of equally worthy purchases successively came into our hands.

¶ Among the bigger undertakings were the purchase of the Trans-Mississippi Exposition of Omaha in 1899; the Pan-American Exposition of Buffalo in 1901, and the Louisiana Exposition of St. Louis in 1904. These were followed by numerous other purchases, constantly increasing in number and thereby increasing our capacity to more economically serve our customers.

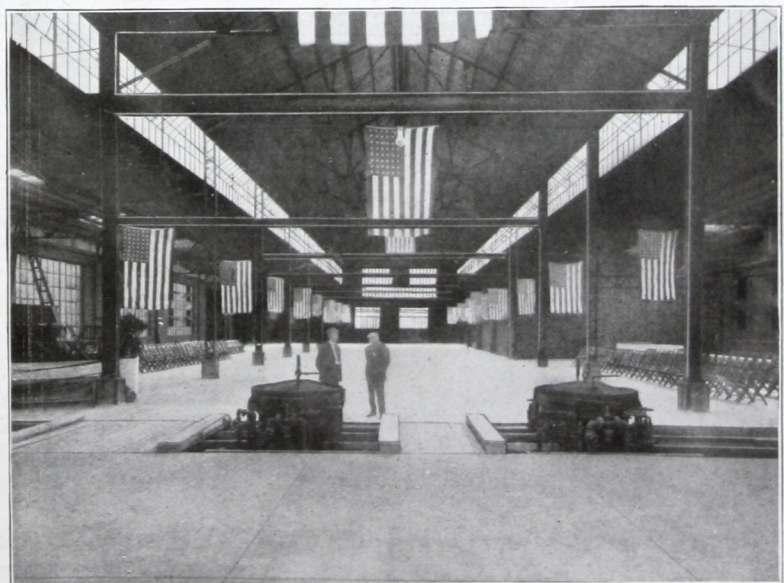


**Views of Structure which We Fabricated
and Erected with Speed and Economy for
The Biggs Boiler Works
Akron, Ohio**

¶ By keeping an experienced corps of engineers and representatives ever on the lookout for Opportunities in the Industrial World backed by our dominant Cash Idea, we get direct and first access to available materials, thereby making immense purchases at such favorable prices, that we in turn are enabled to sell or rather "undersell," be it on steel or any other Building Material.



Views of Steel Frame
and Finished Building
Fabricated and Erected
by Us for
Wilson Tire and Rubber Co.,
Springfield,
Illinois



¶ To illustrate our unlimited capacity to serve Builders—we need only mention the fact that in our large Building Exposition, at our Chicago Plant, covering 20 acres, there is always on hand upwards of 10,000 tons of steel, any portion of which, large or small, can be fabricated and delivered on very short notice.

¶ And now that we have explained our policy, our method and unlimited capacity for serving those who desire to build economically, be it a garage, industrial building, mill, foundry, tower or warehouse; and who wish further to feel assured that the amount they have saved in money has been a definite, tangible Cash Saving—without any sacrifice as to the quality, durability of material—let us state a fact with all the emphasis at our command—

**THAT THE MATERIAL SOLD BY US
IS ALSO GUARANTEED BY US**

For Instance:—The Building Departments of the largest cities in the United States have approved plans submitted by our engineering department. They have inspected and passed on finished steel after erection.



View of Chicago's Largest Daylight Display Salesroom. Our Own Retail Furniture Building. This Building, Formerly a Railroad Passenger Terminal, Was Dismantled, Moved and Re-erected at Our Own Plant by Us

¶ Whenever or wherever it is your intention to build, before doing so—you would do well by consulting our Engineering Department which is always ready to submit estimate of cost and to serve you without charge.

¶ Right here a word may be in place, which will help those who are debating with themselves as to the preference of steel over lumber. Answering this we need only state, that if one considers **Steel** from the standpoints of **Service**, Lower Insurance, Expense, the Saving of Labor Costs and the matter of Permanency—he will readily answer his own question of “Why Steel?” And why it is more **Economical** and **Serviceable**.

¶ Then if he will further realize that we can save him an additional sum on Steel, through our unique and extensive methods as above explained, he will appreciate the full value of structural steel on “all” work, large or small.

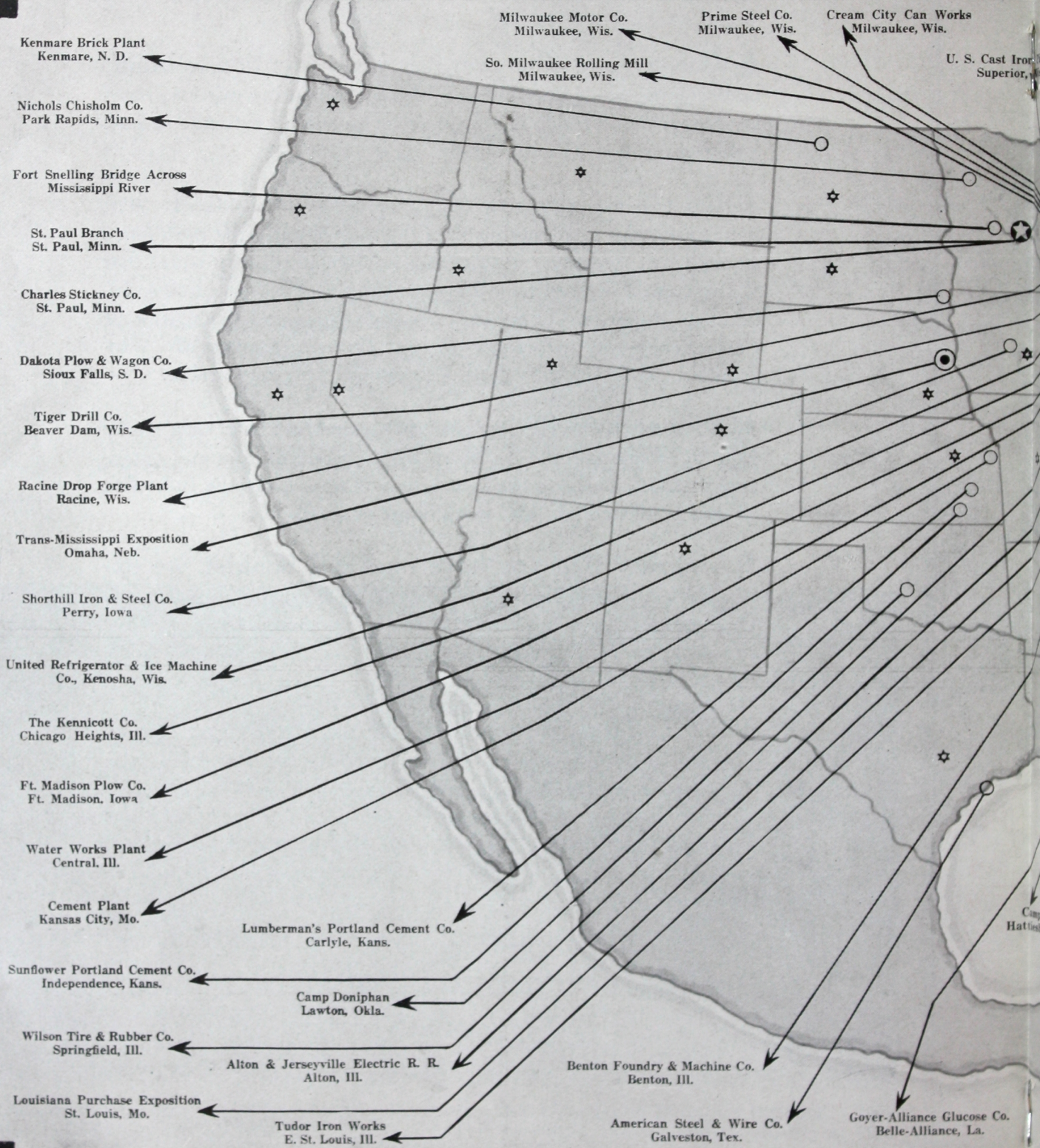
¶ And now that you have read this booklet, we extend you a cordial invitation to visit our large Building Exposition, when convenient, and to observe in person what we have tried to convey to you through the media of the printed word. In the meantime—

¶ Please remember, that our unlimited capacity to serve you, is in keeping with our extensive ability to purchase building material of the highest serviceable quality.

¶ Assuring you of courteous and prompt attention to your inquiries and needs, we are sincerely yours for and in service.

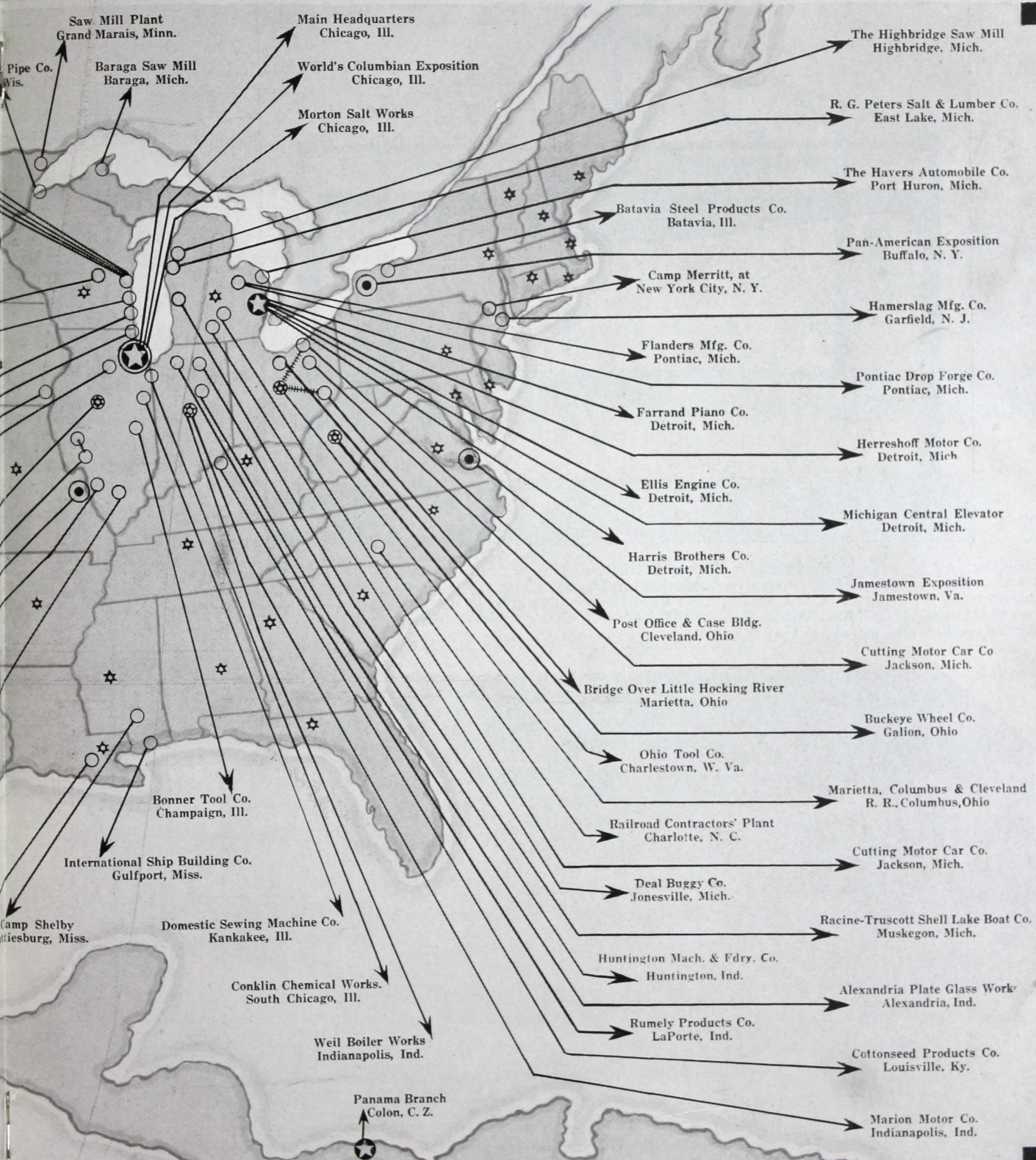
HARRIS BROTHERS COMPANY, CHICAGO

Complete Factories, Plants, Railroads and Ex



HARRIS BR

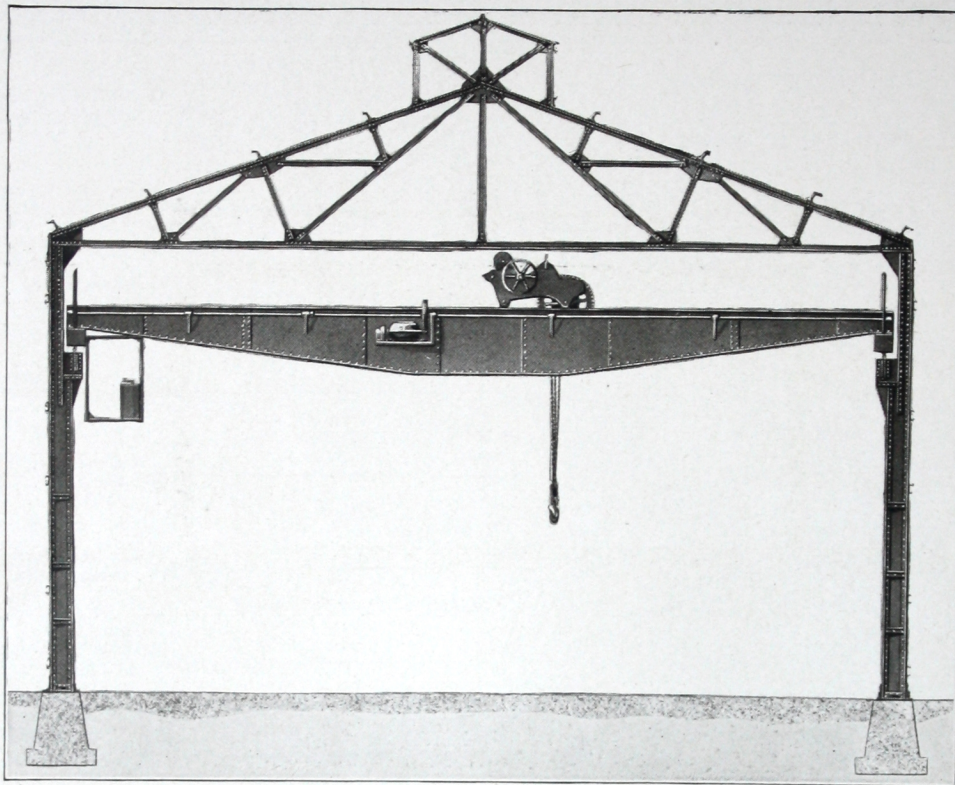
Expositions Dismantled and Erected by us



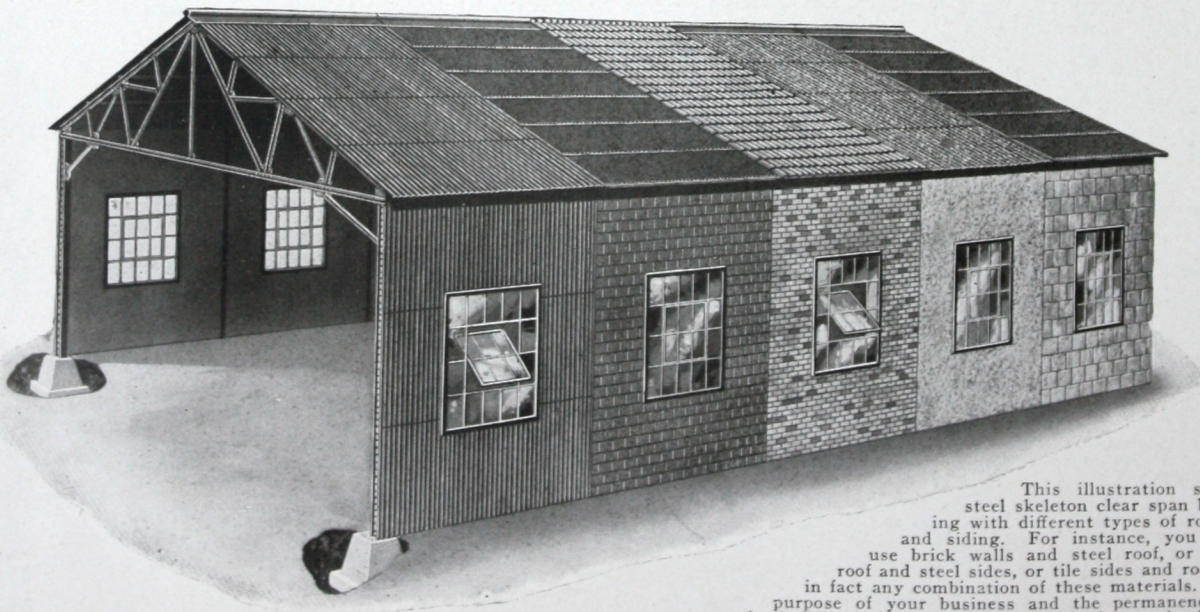
ROTHERS CO.

BY US. EACH DAY NEW CONTRACTS ARE RECEIVED IN EVERY FIELD OF COMMERCE

Clear Span Truss Buildings



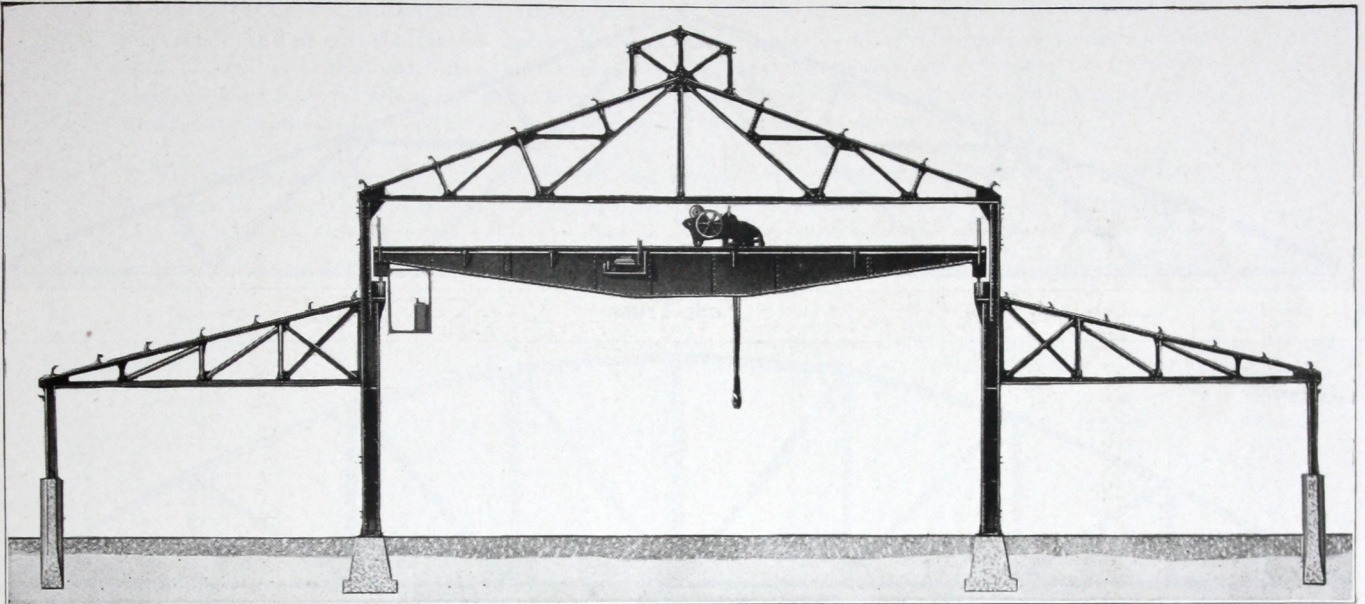
For a building over 40 feet we recommend a clear span truss, such as we have illustrated above. This section shows trusses and columns erected to carry an overhead electric traveling crane. In buildings where electric travelling crane, mono rails, jib cranes and line shafting are used the columns must be designed and strengthened accordingly. If you want this type of building, our engineers will show you many interesting facts concerning economy in this type of construction, and we advise that they be consulted before you take any steps.



This illustration shows steel skeleton clear span building with different types of roofing and siding. For instance, you may use brick walls and steel roof, or steel roof and steel sides, or tile sides and roof, or in fact any combination of these materials. The purpose of your business and the permanency of the building, of course, will be made factors in determining the material used.

In our 25 years of experience in this business, we have collected valuable information that is worth money to you. We advise that you visit us personally at our plant, or at least write us fully.

Foundry Type Buildings



101
23

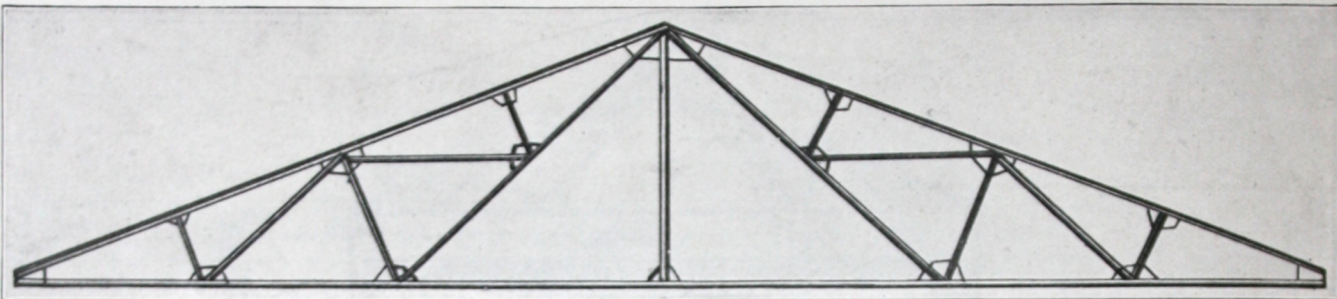
¶ We illustrate here a foundry type of building consisting of one center bay or span with leanto on each side. The above illustration shows an electric travelling crane in the center span only, but it is very often desirable to have a travelling crane (mono rail or jib crane) in the leanto also. There are so many features to this type of building, we would suggest that you write us clearly when in the market.

¶ We often secure buildings of this type, and if necessary can very economically dismantle and remodel to suit your requirements, and re-erect on the spot you desire at a price way below the cost of new material.

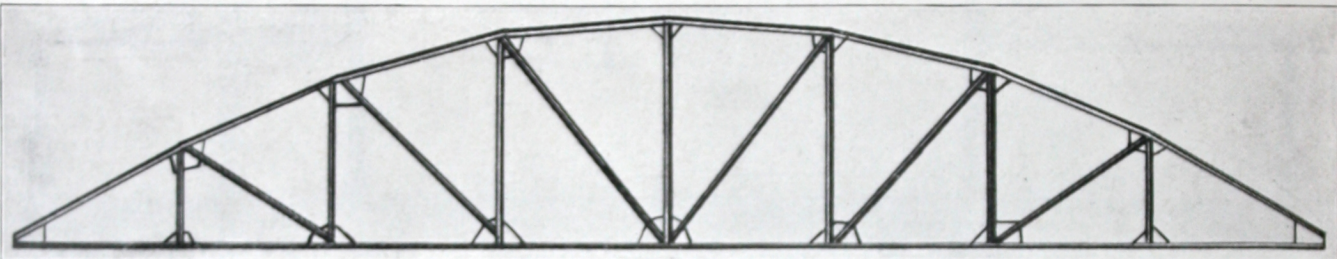
¶ In addition we are often able to assemble completely a building of this kind from material already fabricated for other purposes, and thereby save anywhere from 25 to 40 per cent on the cost of the building.

¶ Prospective buyers should bear in mind that on a steel building of this type our serviceable steel is undoubtedly and without question the equal in serviceability and strength for all practical purposes to new steel fresh from the mill; and to those who are interested in economy, and not sentiment, our proposition will appeal strongly.

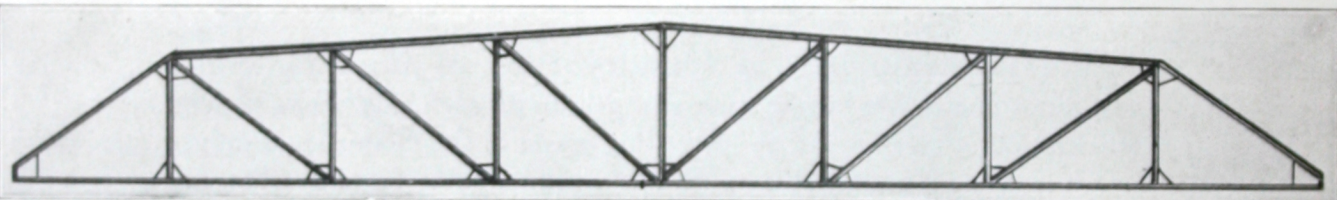
Fabricated Trusses



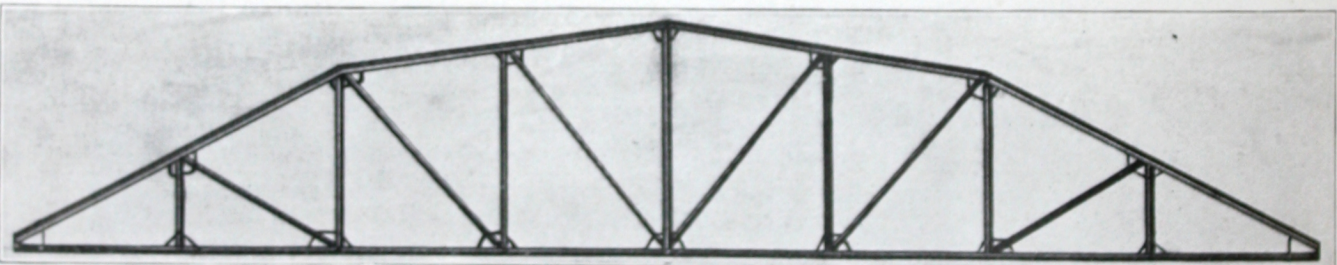
Fink Truss



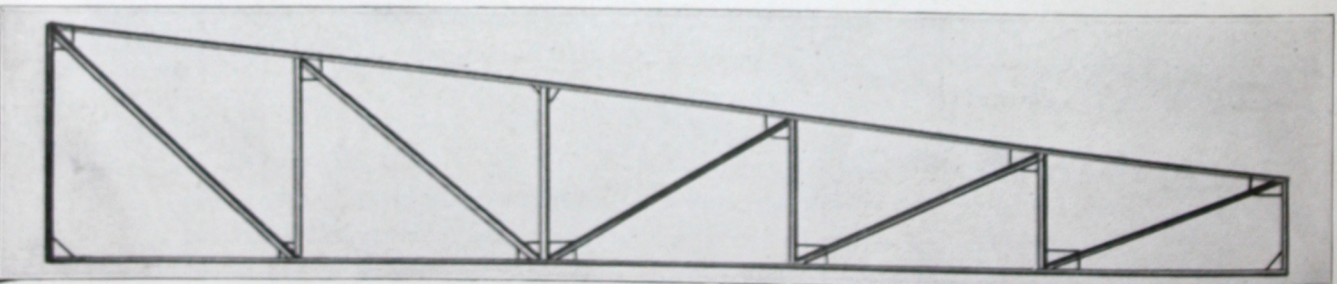
Oval Truss



Pratt Truss



Crescent Truss



Single Pitch Truss

Here are a few standard pattern trusses regularly fabricated in our big, well equipped, Structural Steel Shop. Regular size trusses are furnished quickly. Special trusses for buildings of every kind are furnished with promptness and accuracy from your sketches and specifications.

Weights and Spacing of Roof Trusses

¶ We give below information concerning the most economical designs of steel trusses for roofs. The chart below states the correct spacing of trusses in roof according to length of the span. Local or special conditions may necessitate changing the spacing of the trusses from what we have specified and it is allowable to do this in many cases, but for general purposes, however, it will be found more economical to design your roof and space the trusses as shown on this chart.

¶ The weights given for the trusses on the chart below are approximate only, and are the result of our actually weighing a great number of finished trusses. It is conceivable that there may be a variation in trusses we manufacture from 5 to 7½ per cent from the weights as shown below.

Span in Ft.	Correct Spacing of Trusses in Feet	FINK TRUSS					SINGLE PITCH	*PRATT TRUSS
		Roof Load 40 lbs. Per Sq. Ft.	Roof Load 50 lbs. Per Sq. Ft.	50 Lb. Roof Load with 2 2500 Lb. Lds. at ¼ Pts.	50 Lb. Roof Load with 2 6000 Lb. Lds. at ¼ Pts.	50 Lb. Roof Load with 2 10000 Lb. Lds. at ¼ Pts.	Roof Load 50 Lb. Per Sq. Ft.	Roof Load 50 Lb. Per Sq. Ft.
20	12	460	575	820	1150		690	640
25	12	650	810	1080	1460		970	910
30	15	1030	1290	1580	1980		1550	1450
35	15	1330	1660	1980	2420		1990	1860
40	16	1710	2130	2460	2930	3460	2550	2390
45	16	2080	2600	2960	3470	4040	3120	2920
50	18	2670	3340	3720	4230	4830	4010	3740
55	18	3160	3950	4350	4910	5540	4740	4440
60	18	3660	4580	5000	5600	6260	5500	5130
65	20	4510	5640	6050	6660	7380	6760	6310
70	20	5140	6410	6880	7530	8250	7700	7190
75	20	5800	7250	7740	8410	9190	8700	8130
80	22	6890	8600	9100	9790	10550	10310	9640
85	22	7680	9590	10100	10800	11650	11500	10720
90	24	8960	11200	11700	12500	13300	13440	12550
95	24	9850	12300	12900	13600	14450	14780	13790
100	25	11200	13900	14500	15200	16120	16680	15580

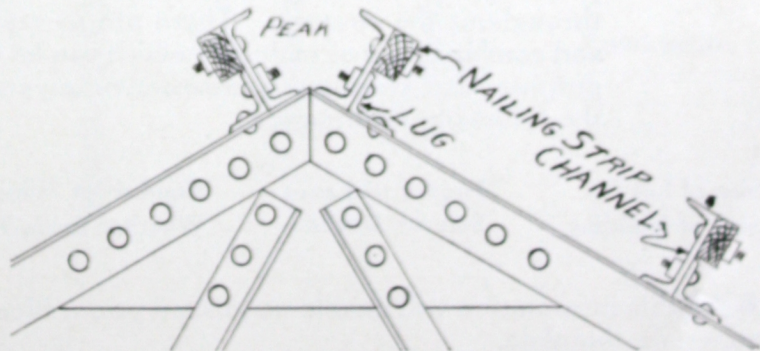
*Crescent and oval Trusses weigh approximately the same as Pratt Trusses

Steel Roof Purlins or Rafters

¶ Regarding purlins for carrying roof sheeting, we recommend as the most economical and simple form of construction standard channels. For lengths from twelve to sixteen feet it is often practical to use angles for purlins. The design of purlin will depend of course upon the roof load and length of span. Spacing purlins on centers of four feet and nine inches, on the top chords of trusses standard weight channels we advise for purlins are as shown in the chart below. (See page 27.)

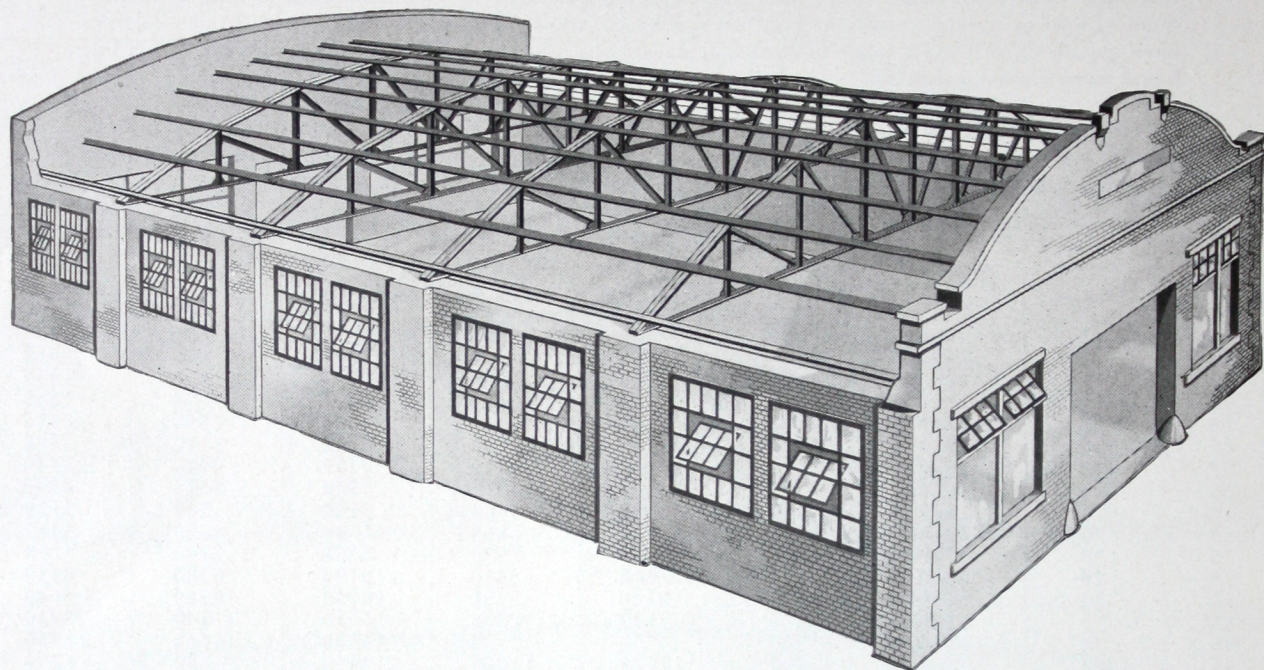
Correct Spacing of Trusses in Ft.	Roof Load 40 Lbs. Square Foot	Roof Load 50 Lbs. Square Foot
12	5" Channel	5" Channel
12	5" Channel	5" Channel
15	6" Channel	6" Channel
15	6" Channel	6" Channel
16	6" Channel	6" Channel
16	6" Channel	7" Channel
18	7" Channel	8" Channel
18	7" Channel	8" Channel
18	7" Channel	8" Channel
20	8" Channel	8" Channel
20	8" Channel	8" Channel
20	8" Channel	8" Channel
22	8" Channel	9" Channel
22	8" Channel	9" Channel
24	9" Channel	10" Channel
24	9" Channel	10" Channel
25	10" Channel	12" Channel

In using 10" and 12" channels for purlins sag rods are advised



The illustration above shows how channel purlins are connected to the top chords of trusses and also shows how nailing strips are bolted to the purlins

Public Garages and Small Shops



¶ The demand for public garages has been so great in the last few years that we have established a separate department to handle this line and are prepared to furnish the prospective garage builder with a world of useful and practical information, which is bound to be of great value to him, and in addition we can furnish all the material necessary at a very great saving.

¶ We illustrate above only one of a number of types of public garage buildings which we have furnished in large numbers throughout the country. There are so many possible arrangements and combinations of materials which can be used economically for this purpose, that we suggest prospective buyers write us fully, giving us the following information:

Size of Lot	Height to Eaves	Number of Windows	Size of Office or Show Room
Size of Building	Size of Doors	Whether Brick Wall	Heating Plant, Plumbing, Etc.

¶ All this information will enable us to send you a blue print plan and quotation on cost of materials complete.

¶ We further suggest to prospective garage builders, it is wise for them to bear in mind that we can furnish complete machinery, motors, power transmission for a complete machine shop at considerable saving. We are also able to supply all kinds of gasoline storage tanks, etc.

Single Pitch Steel Structures

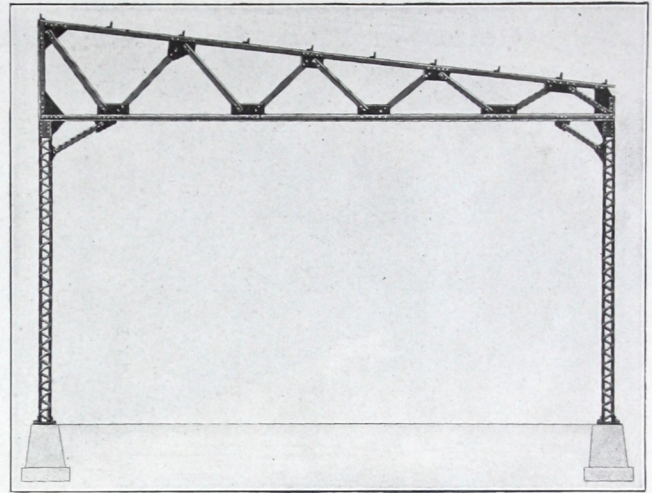
Make Splendid Sheds or Small Shops

Single Pitch or Lean-to Construction

This type of construction is generally used for connecting additions to main buildings where it is desired to increase the area of floor space at the least possible expense. This type of construction can also be used economically independent of other buildings as shown in the illustration at the right and is advised for sheds and structures under 35 feet wide.

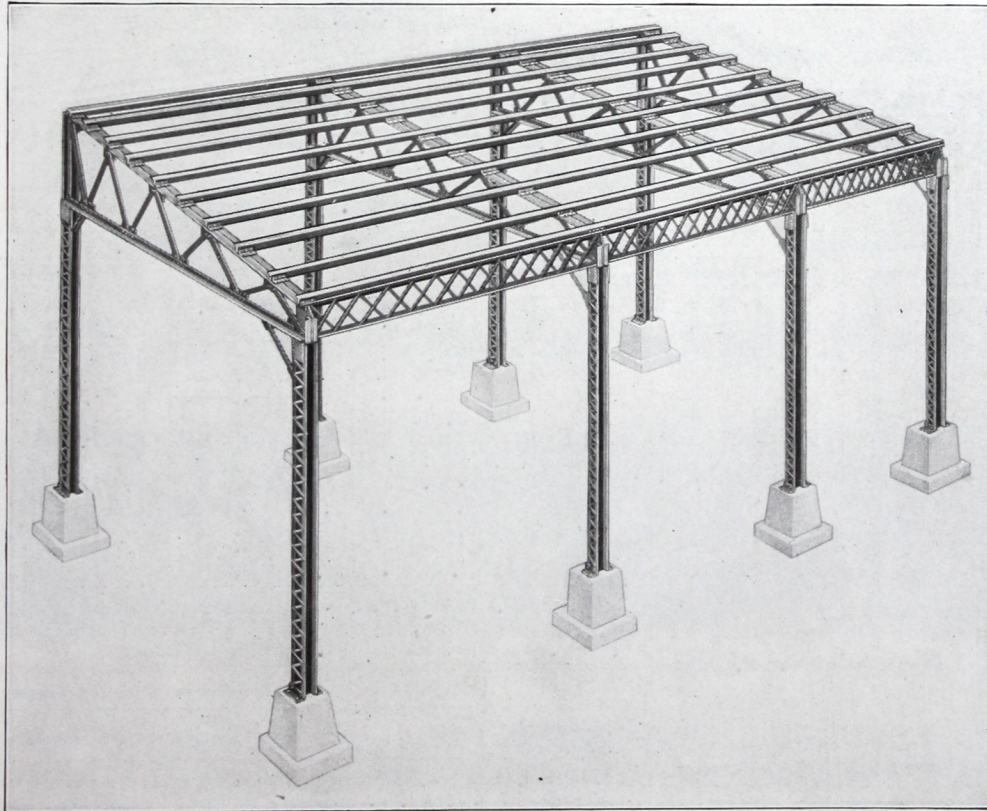
Sizes of Buildings

We can furnish this single pitch type of construction in all desired sizes, but it is usually more practical to put up a single pitch leanto building for widths under 35 feet. We have on hand at all times a large variety of trusses, which we can use to furnish you this type of building very economically. The columns can be made of I beams or other structural shapes, and the weight of load to be carried will determine the size of columns.



Our Complete Service Makes Ordering Easy

If this type of building will be advantageous to you, send us a sketch showing the dimensions of the building and we will be glad to furnish you a proposition covering the steel and all other material necessary for a complete structure.



Foundations

Foundations for a building of this type are usually a small concrete pier under each column, although there are other possibilities in this line for different types of soil.

Construction

We are able to furnish for this type of building galvanized corrugated roofing and siding from stock. We also are prepared to furnish steel sash, or wood sash, and also sliding doors and all the necessary mill work.

Our splendidly constructed lean-to single pitch buildings are perfectly illustrated in the steel skeleton above. You will find every section perfectly fabricated and accurate in every detail.

I-Beam Highway Bridges

Typical Construction when
Concrete Floor is Wanted



Note: Corrugated Arched Sheets



The Bridge Illustrated Shows
Construction When Plank
Floor is Wanted

I-Beams Used in Designing Bridges of This Type Any Width for Vehicles
Having Tread Approximately 5 Feet Wide or Wider

PLANK FLOOR

Span in Feet	LOADING PER 5-FOOT TREAD		
	6-Ton Truck	10-Ton Truck	15-Ton Tractor
10	6"-12.25 lb.	8"-18.00 lb.	9"-21.00 lb.
12	6"-14.75 lb.	8"-20.25 lb.	10"-25.00 lb.
14	7"-15.00 lb.	9"-21.00 lb.	10"-30.00 lb.
16	8"-18.00 lb.	9"-25.00 lb.	12"-31.50 lb.
18	8"-20.25 lb.	10"-25.00 lb.	12"-35.00 lb.
20	9"-21.00 lb.	12"-31.50 lb.	15"-42.00 lb.
22	9"-25.00 lb.	12"-35.00 lb.	15"-42.00 lb.
24	10"-25.00 lb.	12"-40.00 lb.	15"-50.00 lb.
26	12"-31.50 lb.	15"-42.00 lb.	18"-55.00 lb.
28	12"-31.50 lb.	15"-42.00 lb.	18"-55.00 lb.
30	12"-35.00 lb.	15"-45.00 lb.	18"-60.00 lb.
32	12"-40.00 lb.	15"-50.00 lb.	18"-60.00 lb.
36	15"-42.00 lb.	18"-55.00 lb.	20"-65.00 lb.

The beams as specified above are for use with plank flooring and should be spaced as shown below for the loadings as noted.

Flooring	6-Ton Truck	10-Ton Truck	15-Ton Tractor
4" Pine	34" centers	21" centers	
3" Oak	28" centers		
4" Oak		30" centers	21" centers

CONCRETE FLOOR

Span in Feet	LOADING PER 5-FOOT TREAD		
	6-Ton Truck	10-Ton Truck	15-Ton Tractor
10	7"-15.00 lb.	8"-20.25 lb.	10"-25.00 lb.
12	8"-18.00 lb.	9"-21.00 lb.	10"-30.00 lb.
14	8"-20.25 lb.	10"-25.00 lb.	12"-31.50 lb.
16	9"-21.00 lb.	10"-30.00 lb.	12"-35.00 lb.
18	9"-25.00 lb.	12"-31.50 lb.	15"-42.00 lb.
20	10"-25.00 lb.	12"-35.00 lb.	15"-42.00 lb.
22	12"-31.50 lb.	12"-40.00 lb.	15"-50.00 lb.
24	12"-31.50 lb.	15"-42.00 lb.	18"-55.00 lb.
26	12"-35.00 lb.	15"-45.00 lb.	18"-55.00 lb.
28	12"-40.00 lb.	15"-50.00 lb.	18"-60.00 lb.
30	15"-42.00 lb.	15"-55.00 lb.	18"-60.00 lb.
32	15"-42.00 lb.	18"-55.00 lb.	20"-65.00 lb.
36	15"-50.00 lb.	20"-60.00 lb.	20"-70.00 lb.

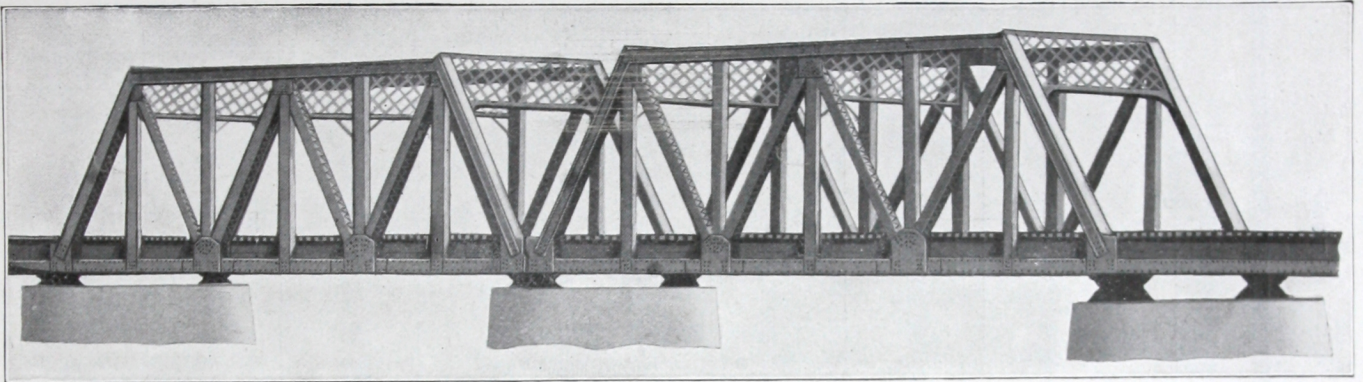
The beams as specified above are for use with concrete flooring and are figured to carry 5" concrete floor, for beams spaced as follows, with loading as noted.

Load	6-Ton Truck	10-Ton Truck	15-Ton Tractor
Spacing for Concrete	33" centers	28" centers	24" centers

These beams can be used with corrugated arch sheets covered with 4 inches of concrete or for 5" reinforced concrete floor. The only other requirements for concrete bridge is that the top of beams should be covered with 2" of concrete and one-half inch dressing.

Railroad and Highway Bridges

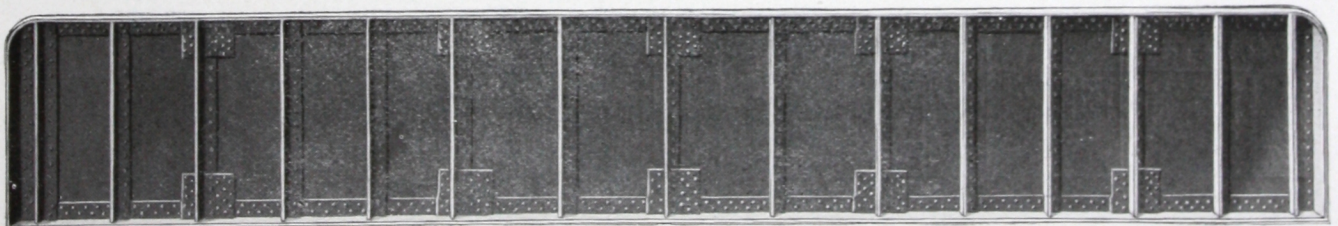
All Steel Fabricated



¶ We have fabricated numerous highway bridges for counties and municipalities and in each instance have been able to save them considerable money. We can not only furnish these bridges fabricated from new steel, but can also supply them in steel that has been in service and for all practical purposes is as good as new.

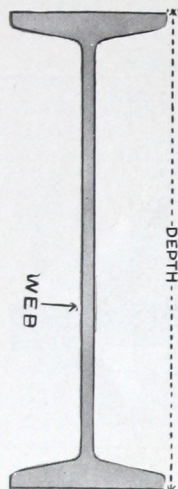
¶ Road Commissioners and Highway Superintendents and others who contemplate figuring on bridge work of this character should get in touch with us first. Upon request we will be glad to furnish names and locations of bridges of this character which we have successfully completed.

Railroad Type Fabricated Plate Girders



¶ Write us your requirements on plate girders, all weights and spans. We always have a number on hand, and if not exactly suited to your requirements we will re-fabricate to your exact dimensions.

Weights and Dimensions of I-Beams



The tables below giving the weights and dimensions of "I" Beams and the safe loads in pounds with uniform distribution have been carefully and accurately compounded. The purpose of this information is to assist you in arriving at your requirements correctly and quickly.

Depth of Beam Inches	Weight per Foot Pounds	Thickness of Web Inches	Width of Flange Inches	Depth of Beam Inches	Weight per Foot Pounds	Thickness of Web Inches	Width of Flange Inches
3	7½ *5½	.36 .17	2.53 2.33	12	35 *31½	.43 .35	5.08 5.00
4	10½ *7½	.41 .19	2.88 2.66	12	55 50 45 40	.82 .70 .58 .46	5.61 5.49 5.37 5.25
5	14¾ 12¼ *9¾	.50 .35 .21	3.29 3.14 3.00	15	50 *42	.56 .41	5.65 5.50
6	17¼ 14¾ *12¼	.47 .35 .23	3.57 3.45 3.33	15	70 60	.78 .59	6.19 6.00
7	20 *15	.45 .25	3.86 3.66	15	80	.81	6.40
8	25½ 23 20½ *18	.54 .44 .35 .27	4.27 4.17 4.08 4.00	18	70 *55	.72 .46	6.25 6.00
9	35 30 25 *21	.73 .56 .40 .29	4.77 4.61 4.44 4.33	20	*65 75 80 90	.50 .63 .60 .74	6.25 6.40 7.00 7.14
10	40 35 30 *25	.74 .60 .45 .31	5.09 4.95 4.80 4.66	24	*80 90 100 105 115	.50 .63 .75 .62 .75	7.00 7.13 7.25 7.87 8.00

*Indicates the standard sizes ordinarily used. Others are termed extra heavy.

When Writing for Quotations

It is necessary when writing for quotations that you approximate the quantity of "I" Beams you require. In order that we may understand your expressions of size and dimensions, please be guided by the illustration above.

Safe Loads in Pounds Uniformly Distributed for Standard I-Beams

Safe loads below are figured for fibre stress of 16,000 pounds per square inch and include weight of beam

I-Beam Size.....	3-Inch		4-Inch		5-Inch			6-Inch			7-Inch			8-Inch			
Weight, lbs. per ft.	5.5	7.5	7.5	10.5	9.75	12.25	14.75	12.25	14.75	17.25	15	17.5	20	18	20.50	23.00	25.25
4-foot span.....	4,410	5,180	7,950	9,520	12,900	14,520	16,160	19,370	21,320	23,280	27,600	29,850	32,140	37,920	40,140	42,740	45,360
5-foot span.....	3,530	4,140	6,360	7,610	10,320	11,620	12,930	15,490	17,050	18,620	22,080	23,880	25,710	30,330	32,100	34,190	36,290
6-foot span.....	2,940	3,450	5,300	6,350	8,600	9,680	10,770	12,910	14,210	15,520	18,400	19,900	21,430	25,280	26,750	28,500	30,240
7-foot span.....	2,520	2,960	4,540	5,440	7,370	8,300	9,230	11,070	12,180	13,300	15,770	17,070	18,370	21,670	22,930	24,420	25,920
8-foot span.....	2,210	2,590	3,980	4,760	6,450	7,260	8,080	9,680	10,660	11,640	13,800	14,930	16,070	18,960	20,060	21,370	22,680
9-foot span.....	1,960	2,300	3,530	4,230	5,730	6,460	7,180	8,610	9,470	10,350	12,270	13,270	14,280	16,850	17,830	19,000	20,160
10-foot span.....	1,770	2,070	3,180	3,810	5,160	5,810	6,460	7,750	8,530	9,310	11,040	11,940	12,860	15,170	16,050	17,100	18,140
15-foot span.....								5,160	5,680	6,210	7,360	7,960	8,570	10,110	10,700	11,400	12,100

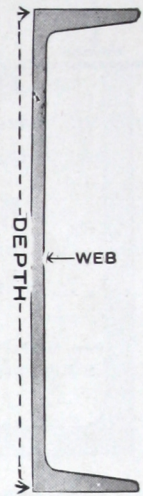
I-Beam Size.....	9-Inch				10-Inch			12-Inch					15-Inch				
Weight, lbs. per ft.	21	25	30	35	25	30	35	31.5	35	40	45	55	42	50	60	70	80
10-foot span.....	20,130	21,790	24,150	26,500	26,050	28,620	31,245	38,375	40,585	47,725	50,795	57,075	62,835	68,755	86,605	94,395	102,235
15-foot span.....	13,420	14,530	16,100	17,670	17,365	19,085	20,835	25,585	27,055	29,145	33,865	38,045	41,885	45,845	57,000	62,925	68,155
20-foot span.....	10,064	10,900	12,070	13,250	13,025	14,315	15,625	19,185	20,295	21,865	25,405	28,535	31,415	34,385	43,300	47,194	51,124
25-foot span.....						11,455	12,500	15,355	16,235	17,495	20,325	22,835	25,135	27,505	28,900	37,749	40,894
30-foot span.....								12,795	13,535	14,570	16,930	19,025	20,945	22,925	22,000	31,465	34,084
35-foot span.....														19,645	18,000	26,969	29,211

I-Beam Size.....	18-Inch		20-Inch				24-Inch				
Weight, lbs. per ft.	55	70	65	75	80	90	80	90	100	105	115
10-foot span.....	94,289	109,181	124,700	135,300	156,400	166,100	185,500	199,000	211,500	249,900	262,700
15-foot span.....	62,863	72,793	83,200	90,200	104,300	110,800	123,700	132,600	141,000	166,600	175,100
20-foot span.....	47,144	54,594	62,400	67,700	78,200	83,100	92,800	99,500	105,800	125,000	131,400
25-foot span.....	37,723	43,673	49,900	54,100	62,600	66,500	74,200	79,600	84,600	100,000	105,100
30-foot span.....	31,433	36,393	41,600	45,100	52,100	55,400	61,800	66,200	70,500	83,300	87,600
35-foot span.....	26,942	31,191	35,600	38,700	44,700	47,500	53,000	56,800	60,400	71,400	75,100
40-foot span.....			31,200	33,800	39,100	41,500	46,400	49,700	52,900	62,500	65,700
45-foot span.....							41,200	44,200	47,000	55,500	58,400
48-foot span.....							38,700	41,500	44,100	52,100	54,700

Weights and Dimensions of Channels

With the information given in the tables below you will have no difficulty in figuring your requirements in Channels. Reference to these tables makes it easy for you to order quickly and accurately with a positive assurance of getting the correct sizes for your work. Don't fail to make use of this information.

Depth of Channels, Inches	Weight Per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Depth of Channels, Inches	Weight Per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches
3	6.00 *4.00	.36 .17	1.60 1.41	9	25.00 20.00 15.00 *13.25	.61 .45 .29 .23	2.81 2.65 2.49 2.43
4	7.25 6.25 *5.25	.32 .25 .18	1.73 1.65 1.58	10	35.00 30.00 25.00 20.00 *15.00	.83 .68 .53 .39 .24	3.18 3.04 2.89 2.74 2.60
5	11.50 9.00 *6.50	.48 .33 .19	2.04 1.89 1.75	12	55.00 35.00 30.00 25.00 *20.50	.83 .64 .51 .39 .28	3.83 3.30 3.17 3.05 2.94
6	15.50 13.00 10.50 *8.00	.56 .44 .32 .20	2.28 2.16 2.04 1.92	15	55.00 50.00 45.00 40.00 35.00 *33.00	.83 .73 .63 .53 .43 .40	3.83 3.73 3.63 3.53 3.43 3.40
7	19.75 17.25 14.75 12.25 *9.75	.63 .53 .42 .32 .21	2.51 2.41 2.30 2.20 2.09				
8	21.25 18.75 16.25 13.75 *11.25	.58 .49 .40 .31 .22	2.63 2.53 2.44 2.35 2.26				



When Writing for Quotations
It is necessary when writing for quotations that you approximate the quantity of channels you require. In order that we may understand your expressions of size and dimensions, please be guided by the illustrations above.

*Indicates standard sizes ordinarily used. Other sizes are termed extra heavy.

Safe Loads in Pounds Uniformly Distributed for Standard Channels

Size of channel....	3-Inch		4-Inch			5-Inch			6-Inch			
	4	6	5.25	6.25	7.25	6.5	9	11.5	8	10.5	13	15.5
4-foot span.....	2,910	3,680	5,060	5,570	6,093	7,910	9,460	11,100	11,550	13,440	15,400	17,360
5-foot span.....	2,330	2,940	4,050	4,450	4,873	6,330	7,570	8,880	9,240	10,750	12,320	13,890
6-foot span.....	1,940	2,450	3,400	3,700	4,063	5,270	6,313	7,400	7,703	8,963	10,275	11,575
7-foot span.....	1,660	2,100	2,890	3,180	3,480	4,520	5,413	6,340	6,603	7,680	8,880	9,925
8-foot span.....	1,450	1,840	2,530	2,780	3,050	3,960	4,733	5,550	5,783	6,720	7,700	8,685
9-foot span.....			2,250	2,470	2,513	3,520	4,210	4,930	5,133	5,970	6,845	7,725
10-foot span.....			2,020	2,230	2,443	3,160	3,790	4,440	4,623	5,380	6,165	6,945
15-foot span.....									3,080	3,580	4,115	4,630

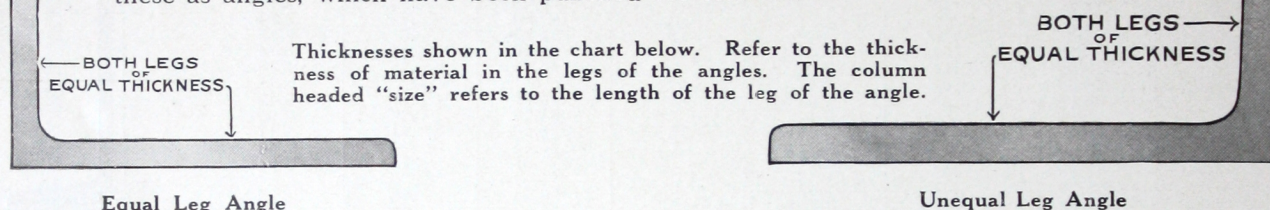
Size of channel....	7-Inch					8-Inch					9-Inch			
	9.75	12.25	14.75	17.25	19.75	11.25	13.75	16.25	18.75	21.25	13.25	15	20	25
4-foot span.....	16,072	18,410	20,700	22,290	25,280	21,530	24,000	26,610	29,235	31,842	28,040	30,130	36,020	41,900
5-foot span.....	12,852	14,730	16,560	18,390	20,220	17,230	19,200	21,290	23,385	25,472	22,430	24,110	28,810	33,520
6-foot span.....	10,712	12,280	13,800	15,330	16,855	14,365	16,004	17,740	19,485	21,232	18,690	20,090	24,010	27,930
7-foot span.....	9,180	10,520	11,830	13,144	14,445	12,315	13,715	15,210	16,705	18,202	16,020	17,220	20,580	23,940
8-foot span.....	8,030	9,210	10,350	11,494	12,645	10,775	12,005	13,310	14,615	15,922	14,020	15,070	18,010	20,950
9-foot span.....	7,135	8,183	9,200	10,224	11,235	9,570	10,675	11,830	12,995	14,153	12,460	13,390	16,010	18,620
10-foot span.....	6,445	7,372	8,280	9,204	10,115	8,610	9,605	10,650	11,695	12,743	11,220	12,050	14,410	16,760
15-foot span.....	4,280	4,910	5,520	6,130	6,740	5,740	6,405	7,105	7,795	8,490	7,480	8,040	9,600	11,170
20-foot span.....									5,850	6,370	5,610	6,030	7,200	8,380
25-foot span.....														6,700

Size of channel....	10-Inch					12-Inch					15-Inch				
	15	20	25	30	35	20.5	25	30	35	40	33	40	45	50	55
10-foot span.....	14,270	16,790	19,410	22,020	24,640	22,780	25,600	28,740	31,870	35,010	44,450	49,420	53,350	57,270	61,190
15-foot span.....	9,510	11,200	12,940	14,680	16,430	15,180	17,070	19,160	21,250	23,340	29,630	32,950	35,560	38,180	40,790
20-foot span.....	7,130	8,400	9,710	11,010	12,330	11,390	12,800	14,370	15,940	17,510	22,230	24,710	26,670	28,630	30,590
25-foot span.....	5,710	6,720	7,760	8,810	9,860	9,110	10,240	11,490	12,750	14,000	17,780	19,770	21,342	22,910	24,480
30-foot span.....									10,620	11,670	14,820	16,470	17,780	19,090	20,400

Weights and Dimensions of Angles

¶ We carry a large stock of new and used angles, of all kinds. New angles we purchase direct from the mill or from surplus stocks and always have in stock the more common sizes.

¶ We always have on hand a quantity of used angles, which are suitable for use as lintels (see page 29) and for a large number of other purposes. We term these as angles, which have been punched for fabrication.

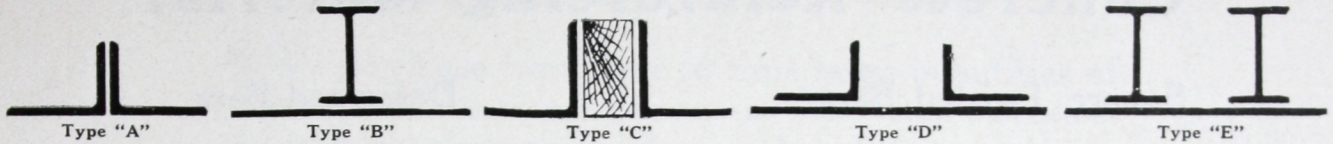


¶ It is desirable when making up the schedule of your requirements to list size of angles you require with one or two substitutes, which can be shipped if the size you mention is not in stock. It is also desirable in stating the length you require the angles, to tell us whether the length stated is the minimum length or whether it is a multiple of the minimum length. Always state minimum length usable and multiples desired.

Weights of Steel Angles in Pounds per Lineal Foot

Size, Inches		THICKNESS—INCHES										
		1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
8 x 8								26.4	29.6	32.7	35.8	38.9
7 x 3 1/2							15.0	17.0	19.1	21.0	23.0	24.9
6 x 6						14.9	17.2	19.6	21.9	24.2	26.5	28.7
6 x 4						12.3	14.3	16.2	18.1	20.0	21.8	23.6
6 x 3 1/2						11.7	13.5	15.3	17.1	18.9	20.6	22.4
5 x 5						12.3	14.3	16.2	18.1	20.0	21.8	23.6
5 x 4						11.0	12.8	14.5	16.2	17.8	19.5	21.1
5 x 3 1/2					8.7	10.4	12.0	13.6	15.2	16.8	18.3	19.8
5 x 3					8.2	9.8	11.3	12.8	14.3	15.7	17.1	18.5
4 1/2 x 3					7.7	9.1	10.6	11.9	13.3	14.7	16.0	17.3
4 x 4			6.6		8.2	9.8	11.3	12.8	14.3	15.7	17.1	18.5
4 x 3 1/2					7.7	9.1	10.6	11.9	13.3	14.7	16.0	17.3
4 x 3					5.8	7.2	8.5	9.8	11.1	12.4	13.6	14.8
3 1/2 x 3 1/2				5.8	7.2	8.5	9.8	11.1	12.4	13.6	14.8	16.0
3 1/2 x 3					6.6	7.9	9.1	10.2	11.4	12.5	13.6	14.7
3 1/2 x 2 1/2				4.9	6.1	7.2	8.3	9.4	10.4	11.5	12.5	
3 1/2 x 3 1/4					7.9							
3 1/4 x 2				4.3	5.3	6.3	7.2	8.1	9.0			
3 x 3		2.5	3.7	4.9	6.1	7.2	8.3	9.4	10.4	11.5		
3 x 2 1/2			3.4	4.5	5.6	6.6	7.6	8.5				
3 x 2			3.07	4.1	5.0	5.9	6.8	7.7	9.5			
2 3/4 x 2 3/4		2.3	3.4	4.5	5.6	6.6	7.6	8.5				
2 1/2 x 2 1/2		2.1	3.1	4.1	5.0	5.9	6.8	7.7				
2 1/2 x 2			2.8	3.7	4.5	5.3	6.1	6.8				
2 1/2 x 1 3/4			2.6	3.4								
2 1/2 x 1 1/2			2.12	2.77	3.4							
2 1/4 x 2 1/4		1.9	2.8	3.7	4.5	5.3	6.1	6.8				
2 1/4 x 1 1/2			2.3	3.0	3.7	4.4	5.0					
2 1/4 x 1		1.65	2.44	3.2	3.92	4.7	5.3	5.6				
2 x 2			2.1	2.8		4.0						
2 x 1 1/2			2.4	2.66								
1 3/4 x 1 3/4		1.4	2.2	2.77	3.4	4.0						
1 1/2 x 1 1/2		1.2	1.8	2.34	2.86	3.35	4.6					

Steel Lintels



This chart shows the correct steel lintel to use for carrying any height concrete block or brick walls over openings

Width of Opening, Ft. and In.	9-Inch Brick Wall			13-Inch Brick Wall			17-Inch Brick Wall			21-Inch Brick Wall		
	Lintel Number	Lintel Type	Use for One Lintel	Lintel Number	Lintel Type	Use for One Lintel	Lintel Number	Lintel Type	Use for One Lintel	Lintel Number	Lintel Type	Use for One Lintel
3'-0".....	18-AS-10	A	2 angles 3 1/2"x2 1/2"x 1/4"x3'-9"	18-AS-27	C	2 angles 4"x4"x 3/8"x 3'-9" or 2 angles 5"x3"x 3/8"x 3'-9"	18-AS-44	D	2 angles 3 1/2"x2 1/2"x 1/4"x3'-9" and 1 Pl. 15"x1 1/2"x3'-9"	18-AS-61	D	2 angles 5"x3"x 3/8"x 3'-9" and 1 Pl. 18"x1 1/2"x3'-9"
3'-6".....	18-AS-11	A	2 angles 3 1/2"x2 1/2"x 1/4"x4'-3"	18-AS-28	C	2 angles 4"x4"x 3/8"x 4'-3" or 2 angles 5"x3"x 3/8"x 4'-3"	18-AS-45	D	2 angles 3 1/2"x2 1/2"x 1/4"x4'-3" and 1 Pl. 15"x1 1/2"x4'-3"	18-AS-62	D	2 angles 5"x3"x 3/8"x 4'-3" and 1 Pl. 18"x1 1/2"x4'-3"
4'-0".....	18-AS-12	A	2 angles 3 1/2"x2 1/2"x 1/4"x4'-9"	18-AS-29	C	2 angles 4"x4"x 3/8"x 4'-9" or 2 angles 5"x3"x 3/8"x 4'-9"	18-AS-46	D	2 angles 3 1/2"x2 1/2"x 1/4"x4'-9" and 1 Pl. 15"x1 1/2"x4'-9"	18-AS-63	D	2 angles 5"x3"x 3/8"x 4'-9" and 1 Pl. 18"x1 1/2"x4'-9"
4'-6".....	18-AS-13	A	2 angles 3 1/2"x2 1/2"x 1/4"x5'-3"	18-AS-30	C	2 angles 4"x4"x 3/8"x 5'-3" or 2 angles 5"x3"x 3/8"x 5'-3"	18-AS-47	D	2 angles 3 1/2"x2 1/2"x 1/4"x5'-3" and 1 Pl. 15"x1 1/2"x5'-3"	18-AS-64	D	2 angles 5"x3"x 3/8"x 5'-3" and 1 Pl. 18"x1 1/2"x5'-3"
5'-0".....	18-AS-14	A	2 angles 4"x3"x 3/8"x 5'-9"	18-AS-31	C	2 angles 4"x4"x 3/8"x 5'-9" or 2 angles 5"x3"x 3/8"x 5'-9"	18-AS-48	D	2 angles 3 1/2"x2 1/2"x 1/4"x5'-9" and 1 Pl. 15"x1 1/2"x5'-9"	18-AS-65	D	2 angles 5"x3"x 3/8"x 5'-9" and 1 Pl. 18"x1 1/2"x5'-9"
6'-0".....	18-AS-15	A	2 angles 4"x3"x 3/8"x 7'-0"	18-AS-32	C	2 angles 4"x4"x 3/8"x 7'-0" or 2 angles 5"x3"x 3/8"x 7'-0"	18-AS-49	D	2 angles 4"x3"x 3/8"x 7'-0" and 1 Pl. 15"x1 1/2"x7'-0"	18-AS-66	D	2 angles 5"x3"x 3/8"x 7'-0" and 1 Pl. 18"x1 1/2"x7'-0"
7'-0".....	18-AS-16	A	2 angles 4"x3"x 3/8"x 8'-0"	18-AS-33	C	2 angles 4"x4"x 3/8"x 8'-0" or 2 angles 5"x3"x 3/8"x 8'-0"	18-AS-50	D	2 angles 4"x3"x 3/8"x 8'-0" and 1 Pl. 15"x1 1/2"x8'-0"	18-AS-67	D	2 angles 5"x3"x 3/8"x 8'-0" and 1 Pl. 18"x1 1/2"x8'-0"
8'-0".....	18-AS-17	B	1-4" 7 1/2-lb. I-Bm. x9'-0" and 1 Pl. 8"x1 1/2"x9'-0"	18-AS-34	B	1-4" 7 1/2-lb. I-Bm. x9'-0" and 1 Pl. 10"x1 1/2"x9'-0"	18-AS-51	E	2-4" 7 1/2-lb. I-Bms. x9'-0" and 1 Pl. 15"x1 1/2"x9'-0"	18-AS-68	E	2-4" 7 1/2-lb. I-Bms. x9'-0" and 1 Pl. 18"x1 1/2"x9'-0"
9'-0".....	18-AS-18	B	1-4" 7 1/2-lb. I-Bm. x10'-0" and 1 Pl. 8"x1 1/2"x10'-0"	18-AS-35	B	1-4" 7 1/2-lb. I-Bm. x10'-0" and 1 Pl. 10"x1 1/2"x10'-0"	18-AS-52	E	2-4" 7 1/2-lb. I-Bms. x10'-0" and 1 Pl. 15"x1 1/2"x10'-0"	18-AS-69	E	2-4" 7 1/2-lb. I-Bms. x10'-0" and 1 Pl. 18"x1 1/2"x10'-0"
10'-0".....	18-AS-19	B	1-4" 7 1/2-lb. I-Bm. x11'-0" and 1 Pl. 8"x1 1/2"x11'-0"	18-AS-36	B	1-5" 9 3/4-lb. I-Bm. x11'-0" and 1 Pl. 10"x1 1/2"x11'-0"	18-AS-53	E	2-4" 7 1/2-lb. I-Bms. x11'-0" and 1 Pl. 15"x1 1/2"x11'-0"	18-AS-70	E	2-5" 9 3/4-lb. I-Bms. x11'-0" and 1 Pl. 18"x1 1/2"x11'-0"
12'-0".....	18-AS-20	B	1-3" 9 3/4-lb. I-Bm. x13'-0" and 1 Pl. 8"x1 1/2"x13'-0"	18-AS-37	B	1-6" 12 1/4-lb. I-Bm. x13'-0" and 1 Pl. 11"x1 1/2"x13'-0"	18-AS-54	E	2-5" 9 3/4-lb. I-Bms. x13'-0" and 1 Pl. 15"x1 1/2"x13'-0"	18-AS-71	E	2-6" 12 1/4-lb. I-Bms. x13'-0" and 1 Pl. 18"x1 1/2"x13'-0"
14'-0".....	18-AS-21	B	1-6" 12 1/4-lb. I-Bm. x15'-0" and 1 Pl. 8"x1 1/2"x15'-0"	18-AS-38	B	1-8" 18-lb. I-Bm. x15'-0" and 1 Pl. 11"x1 1/2"x15'-0"	18-AS-55	E	2-6" 12 1/4-lb. I-Bms. x15'-0" and 1 Pl. 15"x1 1/2"x15'-0"	18-AS-72	E	2-7" 15-lb. I-Bms. x15'-0" and 1 Pl. 18"x1 1/2"x15'-0"
16'-0".....	18-AS-22	B	1-8" 18-lb. I-Bm. x17'-0" and 1 Pl. 8"x1 1/2"x17'-0"	18-AS-39	B	1-9" 21-lb. I-Bm. x17'-0" and 1 Pl. 11"x1 1/2"x17'-0"	18-AS-56	E	2-8" 18-lb. I-Bms. x17'-0" and 1 Pl. 15"x1 1/2"x17'-0"	18-AS-73	E	2-9" 21-lb. I-Bms. x17'-0" and 1 Pl. 18"x1 1/2"x17'-0"
18'-0".....	18-AS-23	B	1-9" 21-lb. I-Bm. x19'-0" and 1 Pl. 8"x1 1/2"x19'-0"	18-AS-40	B	1-10" 25-lb. I-Bm. x19'-0" and 1 Pl. 11"x1 1/2"x19'-0"	18-AS-57	E	2-9" 21-lb. I-Bms. x19'-0" and 1 Pl. 15"x1 1/2"x19'-0"	18-AS-74	E	2-10" 25-lb. I-Bms. x19'-0" and 1 Pl. 18"x1 1/2"x19'-0"
20'-0".....	18-AS-24	B	1-10" 25-lb. I-Bm. x21'-0" and 1 Pl. 8"x1 1/2"x21'-0"	18-AS-41	B	1-12" 31 1/2-lb. I-Bm. x21'-0" and 1 Pl. 11"x1 1/2"x21'-0"	18-AS-58	E	2-10" 25-lb. I-Bms. x21'-0" and 1 Pl. 15"x1 1/2"x21'-0"	18-AS-75	E	2-12" 31 1/2-lb. I-Bms. x21'-0" and 1 Pl. 18"x1 1/2"x21'-0"
25'-0".....	18-AS-25	B	1-15" 42-lb. I-Bm. x26'-6" and 1 Pl. 8"x1 1/2"x26'-6"	18-AS-42	B	1-15" 45-lb. I-Bm. x26'-6" and 1 Pl. 11"x1 1/2"x26'-6"	18-AS-59	E	2-12" 31 1/2-lb. I-Bms. x26'-6" and 1 Pl. 15"x1 1/2"x26'-6"	18-AS-76	E	2-15" 42-lb. I-Bms. x26'-6" and 1 Pl. 18"x1 1/2"x26'-6"
30'-0".....	18-AS-26	B	1-18" 55-lb. I-Bm. x32'-0" and 1 Pl. 8"x1 1/2"x32'-0"	18-AS-43	B	1-20" 65-lb. I-Bm. x32'-0" and 1 Pl. 11"x1 1/2"x32'-0"	18-AS-60	E	2-15" 42-lb. I-Bms. x32'-0" and 1 Pl. 15"x1 1/2"x32'-0"	18-AS-77	E	2-18" 55-lb. I-Bms. x32'-0" and 1 Pl. 18"x1 1/2"x32'-0"

These lintels are designed to carry brick in walls of any height over openings. They are not designed to carry floor beams. Do not place any weight additional to brick, concrete blocks or other wall materials over them. Mention lintel number, type of lintel, width of wall and length of opening when writing.

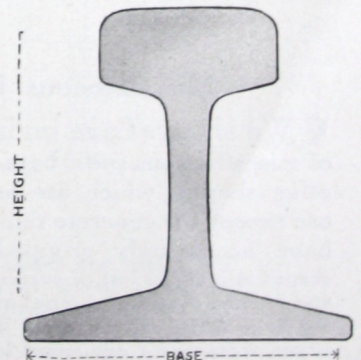
New Rails and Relaying Rails

We carry in stock at all times new rails of the lighter sizes. We also purchase from time to time large quantities of relaying rail, or rail that has been in previous service, but which is in condition for further usage. Occasionally we purchase complete railroads, and have all rolling stock and track equipment to sell.

We also carry in stock splices, angle bars, tie plates, switch points, frogs, crossings and other rail equipment. As this class of material is in constant demand, we are unable to supply a printed list. Write us your requirements and we will be glad to quote you.

Rail Sizes and Weights

Weight per Yard in Pounds	Height of Rail in Inches	Base of Rail in Inches	Weight in Gross Tons for 1 Mile Single Track
100	5 3/4	5 3/4	157.14
90	5 3/8	5 3/8	141.43
85	5 3/16	5 3/16	133.57
80	5	5	125.71
75	4 13/16	4 13/16	117.86
70	4 5/8	4 5/8	110.00
65	4 7/16	4 7/16	102.14
60	4 1/4	4 1/4	94.29
55	4 1/8	4 1/8	86.43
50	3 7/8	3 7/8	78.57
45	3 11/16	3 11/16	70.71
40	3 1/2	3 1/2	62.86
35	3 5/8	3 5/8	55.00
30	3 1/8	3 1/8	47.14
25	3 1/16	2 3/4	39.29
20	2 5/8	2 5/8	31.42
16	2 3/8	2 3/8	25.14
12	2	2	18.86
8	1 3/16	1 3/16	12.57



Concrete Reinforcing Material

Square Twisted Bars



Size in Inches	Weight Per Foot—Pounds
1/4	.212
5/16	.332
3/8	.478
7/16	.651
1/2	.850
9/16	1.076
5/8	1.328
11/16	1.607
3/4	1.913
13/16	2.245
7/8	2.603
15/16	2.988
1	3.400
1 1/8	4.303
1 1/4	5.312
1 3/8	6.428
1 1/2	7.650

Deformed Bars

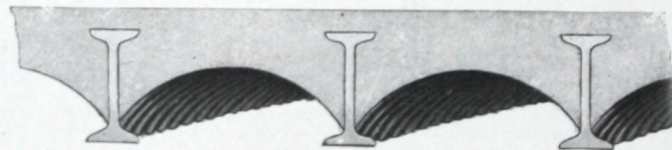


A Word About Concrete Reinforcing

¶ In addition to twisted and deformed reinforcing bars, we always have on hand a large and varied assortment of material which can be used satisfactorily for concrete reinforcing no matter what kind of a job you are figuring on.

¶ We suggest that you write us the nature of the work, and the amount of material that you will need. We may have on hand some reinforcing material which we can sell you at a price far below the market on steel bars and standard reinforcing material.

Concrete Floors and Roofs



¶ We illustrate here a type of concrete floor or roof, suitable for a bridge floor, cellar roof, or floors above the ground in any building, for which we can furnish both the necessary beams or rails and the corrugated arched sheets to hold up the concrete. See the chart on previous page under I-Beam bridges, which gives the correct sizes of I-Beams to use in designing work of this nature.

Miscellaneous Reinforcing

¶ We always have on hand a large tonnage of miscellaneous rods, bars, flats, angles, rails and other shapes, which are not suitable for further use except for concrete reinforcing purposes. We have accordingly grouped these miscellaneous shapes into mixed lots of corresponding sizes and weights and recommend this material for reinforcing jobs involving large areas of concrete. If interested in this proposition, write us for our mixed lot reinforcing list.

Girder Rails

¶ From time to time we acquire large quantities of special girder rails, which have been used for electric street car tracks. These rails weigh 27 pounds to the foot and are equivalent in carrying strength to a 9" I-beam, and can be used very satisfactorily in reinforcing cement, and also as mine braces, and for many other purposes.

Plates—Sheets—Bars

¶ We purchase from time to time large quantities of plates, sheets and bars from government, overstocked warehouses and from manufacturers' surpluses, and at all times we have a large tonnage of the more common dimensions.

¶ Any manufacturer or user of this material can buy to advantage by consulting our stock list and buying from us.

¶ In the charts below we give you information bearing on these items.

United States Standard Gauge for Sheet and Plate Iron and Steel

Number of gauge	Approximate thickness in fraction of inch	Approximate thickness in decimal part of an inch	Approximate thickness in Millimeters	Weight per sq. ft. in lbs. Avoir. Iron	Weight per sq. ft. in lbs. Avoir. Steel
0	5/16	.3125	7.94	12.50	12.75
1	9/32	.28125	7.14	11.25	11.475
2	17/64	.265625	6.75	10.625	10.8375
3	1/4	.25	6.35	10.	10.2
4	15/64	.234375	5.95	9.375	9.5625
5	7/32	.21875	5.56	8.75	8.925
6	13/64	.203125	5.16	8.125	8.2875
7	3/16	.1875	4.76	7.5	7.65
8	11/64	.171875	4.37	6.875	7.0125
9	5/32	.15625	3.97	6.25	6.375
10	9/64	.140625	3.57	5.625	5.7375
11	1/8	.125	3.18	5.	5.1
12	7/64	.109375	2.78	4.375	4.4625
13	3/32	.09375	2.38	3.75	3.825
14	5/64	.078125	1.98	3.125	3.1875
15	9/128	.0703125	1.79	2.8125	2.8687
16	1/16	.0625	1.59	2.5	2.55
17	9/160	.05625	1.43	2.25	2.295
18	1/20	.05	1.27	2.	2.04
19	7/160	.04375	1.11	1.75	1.785
20	3/80	.0375	.953	1.50	1.53
21	11/320	.034375	.873	1.375	1.4025
22	1/32	.03125	.794	1.25	1.275
23	9/320	.028125	.714	1.125	1.1475
24	1/40	.025	.635	1.	1.02
25	7/320	.021875	.556	.875	.8925
26	3/160	.01875	.476	.75	.765
27	11/640	.0171875	.437	.6875	.70125
28	1/64	.015625	.397	.625	.6375
29	9/640	.0140625	.357	.5625	.57375
30	1/80	.0125	.318	.5	.51
31	7/640	.0109375	.278	.4375	.44625
32	13/1280	.01015625	.258	.40625	.414375
33	3/320	.009375	.238	.375	.3825
34	11/1280	.00859375	.218	.34375	.350625
35	5/640	.0078125	.198	.3125	.31875
36	9/1280	.00703125	.179	.28125	.286875
37	17/2560	.006640625	.169	.265625	.2709375
38	1/60	.00625	.159	.25	.255

Weights Per Lineal Foot of Flat Rolled Steel

Thickness Inches	Width 1 In.	Width 2 Ins.	Width 4 Ins.	Width 6 Ins.	Width 8 Ins.	Width 10 Ins.	Width 12 Ins.
3/16	.63	1.28	2.55	3.83	5.10	6.38	7.65
1/4	.85	1.70	3.40	5.10	6.80	8.50	10.20
5/16	1.06	2.13	4.25	6.38	8.50	10.62	12.75
3/8	1.28	2.55	5.10	7.65	10.20	12.75	15.30
7/16	1.49	2.98	5.95	8.93	11.90	14.88	17.85
1/2	1.70	3.40	6.80	10.20	13.60	17.00	20.40
9/16	1.91	3.83	7.65	11.48	15.30	19.14	22.95
5/8	2.13	4.25	8.50	12.75	17.00	21.25	25.50
11/16	2.34	4.68	9.35	14.03	18.70	23.38	28.05
3/4	2.55	5.10	10.20	15.30	20.40	25.50	30.60
13/16	2.76	5.53	11.05	16.58	22.10	27.62	33.15
7/8	2.98	5.95	11.90	17.85	23.80	29.75	35.70
15/16	3.19	6.38	12.75	19.13	25.50	31.88	38.25
1	3.40	6.80	13.60	20.40	27.20	34.00	40.80

Weights Per Lineal Foot for Round Steel Bars

We also secure from time to time quantities of round mild steel, and wrought iron bars, and we give below the weight per lineal foot for round steel bars.

Diameter Inches	Weight Per Ft.	Diameter Inches	Weight Per Ft.	Diameter Inches	Weight Per Ft.
3/16	.094	3/4	1.502	1 5/8	7.051
1/4	.167	13/16	1.763	1 3/4	8.178
5/16	.261	7/8	2.044	1 7/8	9.388
3/8	.376	15/16	2.347	2	10.68
7/16	.511	1	2.670	2 1/4	13.52
1/2	.668	1 1/8	3.379	2 1/2	16.69
9/16	.845	1 1/4	4.173	2 3/4	20.20
5/8	1.043	1 3/8	5.049	3	24.03
11/16	1.262	1 1/2	6.008		

Shearing, Punching, Bending

Send us your specifications covering shearing, punching and bending of plates, sheets and bars. We cannot only furnish you stock you require, but can also partly fabricate to your specifications at attractive prices. Our shop is equipped with modern machinery suitable for preparing material to your specifications. Ask us for quotations covering your yearly requirements and send us your sketch showing fabrication required.

OUR MAMMOTH OPERATIONS!

The intensive operations of Harris Brothers Company, owners of the Chicago House Wrecking Company, are world famous. We purchase complete factories, railroads and commercial institutions. Besides these, our purchases of Government Merchandise are bound to be of interest to you.

The completion of big deals, which are successfully handled by us with clocklike regularity, bring enormous stocks of merchandise and supplies of every description to us, secured below regular market prices. In addition to our regular operations we are extensively engaged in purchases from the United States and Foreign Governments of Army Camps, merchandise and supplies.

Innumerable leading commercial establishments readily recognize the value of our company as a source of securing staple and standard supplies with profit and satisfaction. They never think of buying until our vast stocks are consulted. This announcement outlines in a brief way the more important of our recent purchases from the Government and other sources.

Brand New Water Tube Boilers!

Entire Surplus Stock Bought from Emergency Fleet Corporation!

This big purchase from the U. S. Shipping Board, Emergency Fleet Corporation brought us all surplus Water Tube Boilers, no longer needed, owing to the completion of their shipbuilding program. All boilers were built under rigid Government supervision; good for 200 lbs. pressure; steel encased, self-contained—or may be bricked in. Hand firing or stoker application—oil, coal or gas burning—250, 300, 350, 400 and 500 H. P. Let our expert Engineers help you.

HEINE, COLVIN and Other Standard Makes!

Located at the Following Points:

Providence, R. I.
Norwalk, Conn.
Yonkers, N. Y.
New York City, N. Y.

Erie, Pa.
Philadelphia, Pa.
Baltimore, Md.
Jacksonville, Fla.

Tampa, Fla.
Mobile, Ala.
New Orleans, La.
Beaumont, Tex.

Savannah, Ga.
Corliss, Wisc.
Chicago, Ills.
Portland, Oreg.

Material Secured in Other Big Purchases!

CORRUGATED SHEETS—Several thousand squares of brand new corrugated steel sheets, all $2\frac{1}{2}$ in. corrugations. The product of leading mills. Width, $27\frac{1}{2}$ in.; length, 7 ft. and 10 ft. All 22 gauge. Painted red two sides. Approximate weight per square, 140 lbs. Located at Columbus, Ohio; New Cumberland, Pa.; Chicago, Ill.; St. Paul, Minn.; Tenaflly, N. J. In addition to the above we can furnish other sizes and other weight sheets.

MACHINERY—Tremendous quantities of ironworking, woodworking, power equipment, electrical equipment and machinery of every character.

STEEL PIPE—1,000 tons of new steel pipe $\frac{3}{4}$ in., 4 in., $4\frac{1}{2}$ in., 5 in., 6 in. and 8 in. Located at Kearney, New Jersey; also all sizes in large quantities at Chicago and at the camps.

REINFORCING WIRE—3,000 rolls of new reinforcement wire, mostly 11 gauge, 100 and 150 ft. to the roll, 18 in., 32 in., 36 in., and 48 in. high. Located at New Cumberland, Pa.

HARDWARE—Considerable stock of hatchets, padlocks and other hardware items. Located at Chicago.

EXPANDED METAL—480,000 square feet of expanded metal in various sizes and meshes. Has been stored in the open and is somewhat rusty. Location—Kearney, New Jersey.

STEEL PLATES—2,000 tons of steel plates ranging from $\frac{1}{4}$ to 13-16 inch thick in all sizes. Located at Eastern Points and Chicago.

MEDICINE CABINETS—Purchased from the Emergency Fleet Corporation. These cabinets are all complete with medical supplies, surgical instruments and surgical dressings. Located at Chicago.

TOLUOL PLANT—Was intended for the manufacture of Toluol—never used. Located at Minneapolis. Contains tanks, pipe, valves, fittings, steel buildings, etc. Will be sold complete or dismantled.

ASBESTOS SHEETS—50 tons asbestos $\frac{1}{2}$ in. and $\frac{3}{4}$ in. thick; full sized sheets; new, perfect material. Located at Chicago.

PLUMBING MATERIAL—Enormous stock of bath tubs, closet outfits, lavatories, sinks, valves, fitting and trimmings, purchased from the Old Hickory Powder Plant, Jacksonville, Tennessee. Most of this material has never been used. Located at Jacksonville.

SMOKE STACKS—Bought from the Emergency Fleet Corporation all stacks, breeching and other steam accessories. These are located at various warehouses throughout the United States.

STEEL STORAGE TANKS—High grade steel storage tanks from the Dupont Chemical Company. These tanks are suitable for the storage of oils, gasoline and other liquids. They are extra well built, mostly of $\frac{1}{2}$ in. plates, and were used only for a short time. The capacity ranges: 5,500 gallons, 8,500 gallons, 10,500 gallons, 11,500 gallons, and 30,000 gallons. These tanks are located at Hopewell, Va.; Carney's Point, N. J., and Barksdale, Wis.

STEEL BARS—800 tons open hearth steel bars in rounds and flats. Located at Brooklyn, New York, and Kearney, New Jersey.

STEEL LOCKERS—Approximately 3,000 steel lockers, located at various Eastern points.

STRUCTURAL STEEL—1,000 tons of beams, channels and angles. Also several complete steel buildings which we can fabricate to suit your requirements. Mostly located at Chicago.

STEEL BILLETS—Several carloads of steel forging billets in various sizes. Located at Chicago.

ZINC SHEETS—20 tons of No. 10 gauge zinc sheets. Located at Cleveland, Ohio.

WIRE—2,000 tons of plain wire bought from the French Government. Sizes $1\frac{1}{2}$, 6, $8\frac{1}{2}$ and 13 gauge. Located at Eastern Warehouses.

BARBED WIRE—Several thousand tons both painted and galvanized 4 point barbed wire. Located at Eastern Warehouses and Chicago.

TIMBERS—5,000,000 feet of high grade timbers, ranging in size from 3x12 in. to 16x60 in., and in lengths up to 38 feet, from our dismantling of the Soo Ore Docks at Ashland, Wisconsin.

TOOL STEEL—Large quantities of high speed and carbon. Located at Detroit and Chicago.

POULTRY NETTING—16,000 rolls galvanized hexagon mesh poultry netting; 36 in. and 72 in. high. Located at Columbus, Ohio, and Chicago.

STEEL RAILINGS—FLOOR PLATES—LADDERS—Purchased from the Emergency Fleet Corporation, consisting of: Ladders, Gratings, Stanchions, Treads, Pipe, Railing, Bar Supports, Checkered Floor Plates and the like. This material is new, was intended for use in ships of the Fleet construction and is located at various warehouses in the East and Chicago.

HARDWOOD LUMBER—2,000,000 pieces of oak and locust, $1\frac{1}{2}$ in. square and round, from 2 ft. to $4\frac{1}{2}$ ft. long.

ARMY TRAINING CAMPS!

Our purchase of big, well equipped Army Training Camps from the United States Government enables us to make quick delivery at attractive prices on all material. We are now engaged in dismantling Camp Merritt, New Jersey, near New York City, and Camp Shelby, near Hattiesburg, Mississippi. We have completed the dismantling at Camp Doniphan, at Lawton, Oklahoma.

Railroad Supplies
Pipe, Valves, Fittings

Plumbing Material
Electrical Apparatus

Heating
Power Plant

Supplies
Equipment

At each of these camps we have thousands of buildings used for warehouses, barracks, etc. Visit any of the camps and make your own selections. Our Postoffice address at Camp Merritt is: Harris Brothers Company, Tenaflly, New Jersey.

Visitors can reach this camp from Tenaflly or Dumont, New Jersey. On application, we will send complete lists of material on sale at Camp Merritt. Address us either at Tenaflly, New Jersey, or at Chicago, Illinois, our headquarters, for complete information.

All Structural Steel for These Modern Chicago Theatres Furnished and Erected By Us



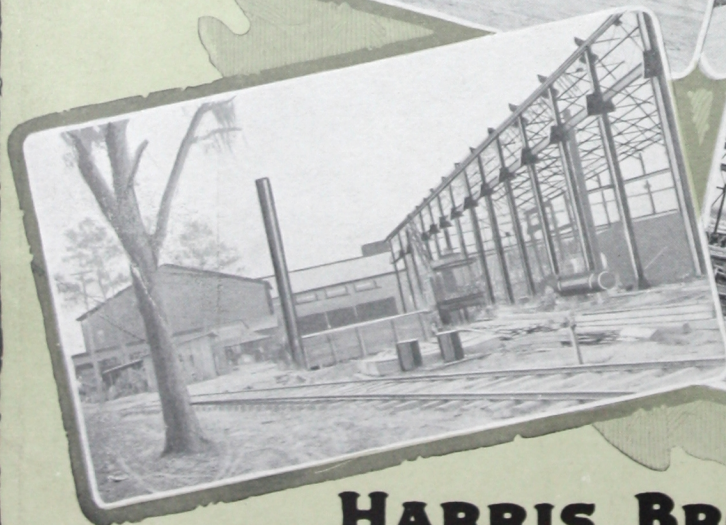
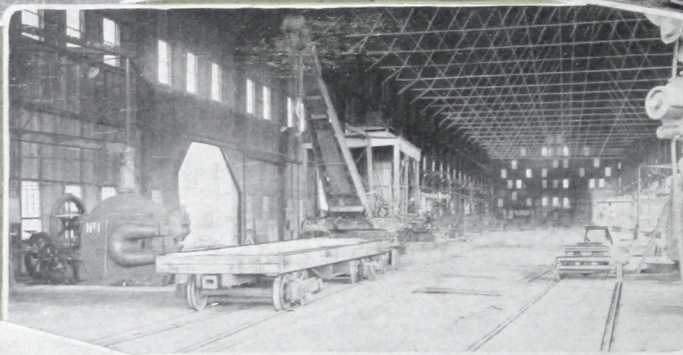
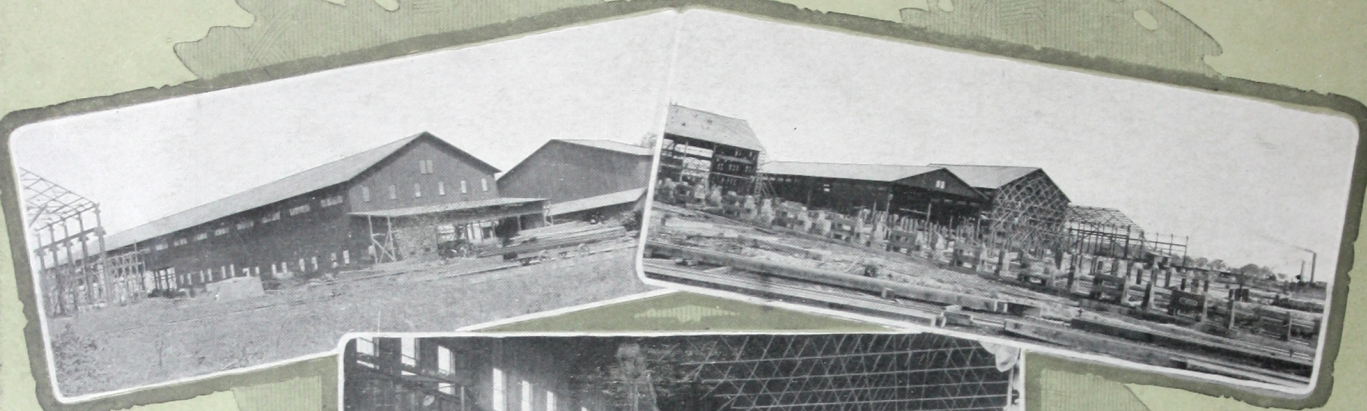
A photographic reproduction of the architect's sketch of the West Englewood Theatre, Chicago. The steel for this large structure with a seating capacity of over 1500 was fabricated and erected by us.



The Desplaines Theatre—seating capacity over 1,000—is a model building of its kind. All steel work planned, fabricated and erected by our Chicago force. These structures are but two of many jobs recently completed by us with big economy to their owners.

HARRIS BROTHERS COMPANY, CHICAGO

Views of
The International Shipbuilding Plant
at Gulfport, Mississippi
All material for steel structures furnished by us



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